

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



UNITED STATES DEPARTMENT OF
AGRICULTURE

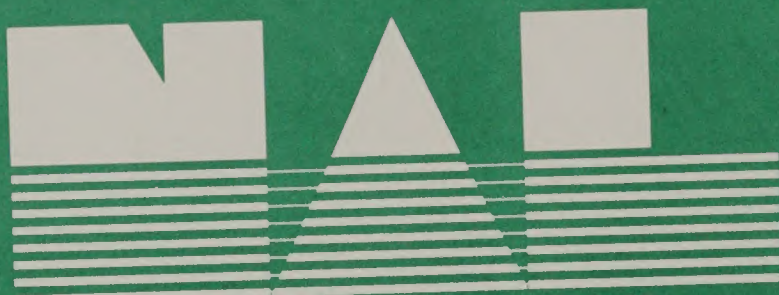
*Cooperative State Research, Education,
and Extension Service and Land-Grant
University System*

HD1476
U6N37

Proceedings



**United States
Department of
Agriculture**



National Agricultural Library

Proceedings of the Second National Small Farm Conference

Edited by:

Denis Ebodaghe, managing editor
USDA-CSREES
Washington, D.C.

Co-Editors:

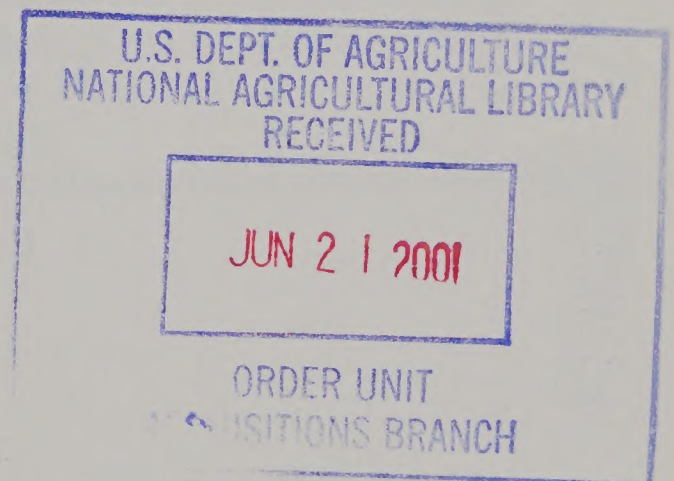
Troy Darden
Lincoln University

Nelson Escobarr
USDA-CSREES
Langston University

Dave McAllister
USDA-CSREES

Published by
Inter-State Printing
Sedalia, MO 65301

October 2000



Second National Small Farm Conference

October 12 - 15, 1999

Regal Riverfront Hotel

St. Louis, MO

For additional copies of these proceedings,
please contact:

Denis Ebodaghe
National Program Leader - Small Farms
USDA-CSREES, Stop 2220
Washington, DC 20250-2220
Phone: (202) 401-4385
Fax: (202) 401-5179
E-mail: debodaghe@reeusda.gov

PREFACE

In developing its recommendations, the USDA's National Commission on Small Farms appointed by the Secretary of Agriculture Dan Glickman in July 1997, described small farms as farms with less than \$250,000 gross receipts annually on which day-to-day labor and management are provided by the farmer and/or the farm family that owns the production or owns, or leases the productive assets.

A farm typology developed by the USDA-Economic Research Service categorizes farms into more homogenous groups than classification based on sales volume alone, producing a more effective policy development tool. The typology identifies five groups of small family farms

(sales less than \$250,000): limited-resource, retirement, residential/lifestyle, farming occupation/lower-sales, and farming occupation/higher-sales. To cover the remaining farms, the typology identifies large family farms, very large family farms, and non family farms.

On October 12-15, 1999, nearly 700 participants from the public and private sectors, including community-based organizations, the land-grant university system, and small and medium-sized family farmers convened in St. Louis, Missouri at the Second National Small Farm Conference.

The purpose of the conference was to strengthen collaboration and partnerships to work more effectively with the small farm community. Participation was a key to the conference's success.

These proceedings capture major issue areas addressed at the conference to include marketing strategies, value-added enterprises, agroforestry, community supported agriculture and food circles, establishment of cooperatives, meeting the research needs of organic farmers, building stronger ties for research and extension to meet small farmers' needs, cooperative marketing for domestic and international markets, getting and managing credits and grants, grant writing, electronic publishing, coping skills, stress, off-farm work, risk management, business and entrepreneurial skills, and farmer-to-farmer and beginning farmer networks.

We hope you will find these proceedings helpful in strengthening collaboration and partnerships to work more effectively in promoting small farm enterprises as viable businesses.

Denis Ebodaghe
National Program Leader for Small Farms
USDA-Cooperative State Research, Education
and Extension Service, Washington, DC 20250

ACKNOWLEDGEMENTS

Collaboration and partnership among public and private sector organizations including community-based organizations resulted in a successful Second National Small Farm Conference. The cooperation among the committees and the dedication by the committee chairs is greatly appreciated.

Great thanks to the following for sponsoring the conference:

Farm Foundation, W. K. Kellogg Foundation, U. S. Environmental Protection Agency, Lincoln University- Jefferson City, Missouri, The University of Missouri- Columbia, Missouri, U.S. Department of Agriculture: Agricultural Marketing Service, Agricultural Research Service Animal and Plant Health Inspection Service, Cooperative State Research Education and Extension Service-Plant and Animal Systems and Sustainable Agriculture, Foreign Agricultural Service, Forest Service, Farm Service Agency, Food Safety and Inspection Service, Grain Inspection, Packers & Stockyards Administration, National Agricultural Statistics Service, Natural Resources Conservation Service, National Office of Outreach, Rural Development, Risk Management Agency.

Great appreciation to Drs. Edward "Ted" Wilson, Daniel Kugler, and Brad Rein for their administrative and program support.

I would like to thank Ms. Stephanie Olson of USDA-CSREES for program support, and Drs. E. Nelson Escobar and Mickie Swisher for their dedication in chairing the Program Committee.

A thank you is most deserving of the host institutions who were involved in the planning and execution of this conference. Thanks to Ms. Troy Darden, Ms. Gladys Tiffany and Dr. Dyremple Marsh of Lincoln University, Jefferson City; and Ms. Debie Kelly, Naomi Schultz and Dr. David Baker of the University of Missouri, Columbia for hosting an excellent conference.

We wish to acknowledge the assistance of the members of the Steering, Program, and Logistics Committees for their patience and resilience during conference planning, and to the conference sponsors for providing the resources to support the conference.

For their assistance in editing the proceedings, many thanks to Mr. Dave McAllister of USDA-CSREES, Ms. Troy Darden and Dr. E. Nelson Escobar.

Many others provided assistance to the overall success of this conference that we are unable to mention, and to all of you, we express our sincere appreciation.

SNSF Conference Committees

National Steering Committee

David Baker, University of
Missouri,

Denis Ebodaghe, USDA-
CSREES

E. Nelson Escobar, USDA-
CSREES

Judith Gillian, New England
Small Farm Institute

Cliff Herron, USDA-FSA

Larry Holmes, USDA-NRCS

Savi Horne, Land Loss
Prevention Project

Desmond Jolly, University of
California, Davis, CA

Daniel Lyons, North Carolina
A&T State University

Greensboro, NC

Dyremple Marsh, Lincoln

University, Jefferson City, MO

Lorette Picciano, Rural

Coalition, Washington, D.C.

Ex-officio

Troy Darden, Lincoln University
Jefferson City, MO

Debi Kelly, University of
Missouri, Columbia, MO

National Program Committee

E. Nelson Escobar, Co-Chair

Mickie Swisher, Co-Chair
University of Florida

Dennis Lamm, Colorado State
University

Marion Simon, Kentucky State
University

Dyremple Marsh

Rosie Koenig, Farmer, Florida

Charles Whitaker, USDA
National Office of Outreach

David Baker

Cliff Herron

Wyatt Fraas, Center for Rural Affairs

Gary Stephenson, Oregon State
University

Kim Kroll, USDA-CSREES

Tom Parslow, University of
Wisconsin

Teresa Maurer, ATTRA

Missouri Logistics Committee:

Troy Darden, Chair, Lincoln University

Dyremple Marsh, Co-Chair, Lincoln University

Sub-committee chairs:

Troy Darden, Publicity

George Enlow, Registration,
Lincoln University

Debi Kelly, Hospitality & Exhibits

Dyremple Marsh, Sponsors

Bud Reber, Educational
Tours, University of
Missouri

Committee members:

Emmanuel Ajuzie, Posters
Lincoln University

David Baker, University of
Missouri

Cheryl Carnell, Lincoln
University

Jack Crofford, Lincoln
University

Joyce Crouch, Lincoln
University

Ben Douglas, Lincoln
University

Darvin Green, Lincoln
University

William Helvey, Lincoln
University

Scott Kimrey, Lincoln
University

Klare Ly, Lincoln University
Roxanne Miller, University of

Missouri

K.B. Paul, Lincoln University

Tory Shade, University of
Missouri

Edward Taylor, Lincoln
University

James Thompson, University of
Missouri

Clover Williams, Lincoln
University

Special thanks to the following for their support:

Lincoln University students:

Mark Green

Kurt Hudson

Nicole Kelley

Alex Little

Khalid Maxie

Anne Marie O'Connor

Markita Phillips

Rebecca Stewart

Lincoln University Business
Office

Lincoln University Cooperative
Extension faculty & staff

Naomi Schultz, University of
Missouri

Kathryn Hill

USDA- Office of Communications

USDA-CSREES staff:

Elain Haughn

LaTracey Lewis

Stephanie Olson

Nicole Shaw

Karl Hampton, USDA-FAS

Special thanks to our sponsors for helping to make the conference a success!

National Sponsors

Farm Foundation

W. K. Kellogg Foundation

United States Environmental Protection Agency

United States Department of Agriculture agencies:

Agricultural Marketing Service (AMS)

Animal and Plant Health Inspection Service

Agricultural Research Service (ARS)

Cooperative State Research, Education and Extension Service
(CSREES)

CSREES Small Farm Program

Economic Research Service (ERS)

Farm Service Agency (FSA)

Foreign Agricultural Service (FAS)

Forest Service (FS)

Food Safety and Inspection Service (FSIS)

Grains Inspection Packers & Stockyards Administration (GIPSA)

Sustainable Agriculture Research and Education (SARE) Program

National Agricultural Statistics Service (NASS)

National Office of Outreach (NOO)

Natural Resources Conservation Service (NRCS)

Risk Management Agency (RMA)

Rural Development (RD)

Missouri Sponsors

Missouri Department of Conservation

Missouri Department of Natural Resources

Missouri Soybean Association (luncheon dessert)

Monsanto Company

Door prize and gift item donors:

Bilardo Brothers Foods, Inc., Kansas City, MO

Missouri Department of Agriculture

Stonehill Winery, Hermann, MO

Table of contents

LUNCHEON ADDRESS~~ OCTOBER 13, 1999

THE SMALL FARM REVOLUTION

John Ikerd

University of Missouri

Columbia, MO _____ 1

1. MARKETING & VALUE ADDED PRODUCTS

INTRODUCTION TO DIRECT MARKETING: TRADITIONAL APPROACHES AND NEW DIRECTIONS

Marketing Strategies for Small Farms: Missouri Goats First on Internet Auction

Emmanuel Ajuzie

Lincoln University Cooperative Extension

Jefferson City, MO _____ 8

The Evolution of Farm Direct Marketing

Monika Roth

Cornell Cooperative Extension

Ithaca, NY _____ 12

Direct Marketing Activities in USDA-Agricultural Marketing Service

Eileen Stommes

Deputy Administrator

USDA-Agricultural Marketing Service

Washington, DC _____ 13

GETTING STARTED IN VALUE-ADDED PRODUCTS

Getting Started in Value Added Products from the Farmer's Perspective

Jennifer Gleason

Sunflower Sundries

Mt. Olivet, KY _____ 16

COMMUNITY SUPPORTED AGRICULTURE AND FOOD CIRCLES: NEW WAYS TO DIRECT MARKETING

Community Food Circles: Directly Linking Farmers and Consumers

Mary Hendrickson

Food Circles Networking Project

University of Missouri Outreach and Extension

Columbia, MO _____ 17

The Community Supported Agriculture (CSA) Model Opportunities and Challenges

David R. Lynch

Sunrise Farm and CSA Garden

Loveland, CO _____ 18

*Community Shared Agriculture and Food Circles Small Farm Involvement in the CSREES,
USDA Community Food Projects Competitive Grants Program: Opportunities through 2002*

Elizabeth Tuckermanthy

USDA-CSREES

Washington, DC _____ 19

MARKETING TO INSTITUTIONS TO BUILD LOCAL AND REGIONAL FOOD SYSTEMS

Farmer-Direct Marketing on the Internet: An Emerging Institution?

J-C. V. Klotz
USDA-Agricultural Marketing Service
Washington, DC _____22

Give Agriculture a Human Face: Strategies to Create Win-Win Direct Marketing Mechanisms for Farmers and Consumers

Richard McCarthy
Economics Institute
Loyola University
New Orleans, LA _____24

COOPERATIVE MARKETING FOR DOMESTIC AND INTERNATIONAL MARKETS

Steps to Organizing a Cooperative

Mike Doherty
USDA-Rural Business and Cooperative Development Specialist
Washington, DC _____25

Exporting for Small-Scale Cooperatives (the Proven Approach)

Samuel W. Scott
Small Farm Development Center
Alcorn State University
Lorman, MS _____26

2. MEETING THE NEEDS OF UNDERSERVED CLIENTS

FOSTERING INTER-INSTITUTIONAL COLLABORATION FOR IMPROVED TECHNICAL & FINANCIAL ASSISTANCE

Financing Young, Beginning, and Small Farmers: The Farm Credit System

John J. Hays
Farm Credit Council
Washington, DC _____27

Encouraging Interagency Cooperation to Assist Small Farmers

John A. Winder
The Samuel Roberts Noble Foundation
Ardmore, OK _____29

MEETING THE NEEDS OF UNDERSERVED CLIENTS: THE 1994 EXPERIENCE

Building a Bridge to Economic Independence: Establishing a 1994 Land-Grant Extension Program

Marie Campos
Institute of American Indian Arts
Santa Fe, NM _____31

A Brighter Outlook for Tomorrow in Indian Country

Ronald Reum
Fort Berthold Community College
New Town, ND _____34

MEETING THE NEEDS OF UNDERSERVED CLIENTS: THE 1890 EXPERIENCE

Building Small Farm Partnership Efforts

Samuel L. Donald
University of Maryland-Eastern Shore
Princess Anne, MD _____35

OUTREACH PROGRAMS FOR BEGINNING FARMERS

Creating Farming Opportunities for the Next Generation

Marion Bowlan

Pennsylvania Farm Link

Manheim, PA _____ 37

New Hampshire Beginning Farmer Resource Guide

Bruce A. Marriott

University of New Hampshire Cooperative Extension

Amherst, MA _____ 38

MEETING THE NEEDS OF SMALL FARMERS - AN INTERAGENCY PERSPECTIVE

The 'New American Farmers': Outreach Challenges and Opportunities

Juan Marinez

USDA-CSREES

Washington, DC and

Michigan State University

East Langston, MI _____ 40

3. SUSTAINABLE AG: AGROFORESTRY & LIVESTOCK ALTERNATIVES FOR SMALL FARMS

SUSTAINABLE AGRICULTURE: NEW APPROACHES FOR SMALL FARMERS

Opportunities for Combining Small Scale and Sustainability in Farming

Karl North

Northland Sheep Dairy

Marathon, NY _____ 41

LIVESTOCK ALTERNATIVES FOR SMALL FARMS

Alternatives for Small Farms-Beef

Martha Mewbourne

Nickelsville, VA _____ 42

Opportunities in the Evolving Range/Pastured Poultry Industry

Steve Muntz

Heifer Project International

Mt. Sterling, NY _____ 43

ENVIRONMENTAL ISSUES FACING SMALL FARMERS

Problems and Solutions to Pesticides' Availability and Their Safe Use by the Small Farmer

F.D. Bullock

University of Tennessee Agricultural Extension Service

Nashville, TN _____ 46

Animal Feeding Operations (AFOs) and the Environment

Ronald A. Harris

Animal Husbandry and Clean Water Programs Division

USDA-Natural Resource Conservation Service

Beltsville, MD _____ 47

AGROFORESTRY INCOME OPPORTUNITIES FOR SMALL FARM OPERATIONS: FOREST FARMING & ALLEY CROPPING

Agroforestry--A Role on the Small Family Farm

H.E. 'Gene' Garrett

School of Natural Resources

University of Missouri
Columbia, MO _____48

Trees & More: Short Term Income Possibilities

Shelby G. Jones

Missouri Department of Conservation

Jefferson City, MO _____49

**AGROFORESTRY- FORESTLAND GRAZING: WINDBREAKS AND SHELTERBELTS: RIPARIAN ZONE
MANAGEMENT**

Silvopasture Management

T.R. Clason

Hill Farm Research Station

Louisiana Agricultural Experiment Station

Louisiana State University

Homer, LA _____52

Agroforestry - Forestland Grazing

George Owens

Chipley, FL _____54

Riparian Forest Buffers Are the Right Thing to Do

Lon Strum

Roland, IA and

Richard Shultz

Iowa State University

Ames, IA _____55

4. DEVELOPING SKILLS

GRANT WRITING FOR FARMERS AND NON-GOVERNMENTAL ORGANIZATIONS

Margaret Krome

Michael Fields Agricultural Institute

East Troy, MI and

Cris Carusi

Nebraska Sustainable Agricultural Society

Hartington, Nebraska _____56

ELECTRONIC PUBLISHING: HOW TO PUT YOU AND YOUR PROGRAMS ON THE WEB

Susan McCue

UC-Davis, Small Farm Center

Davis, CA

Karl Ottenstein

Spring Creek Organic Farm

Sandpoint, ID _____57

GRANT WRITING FOR STATE AND COUNTY FACULTY

Addressing Accountability and Evaluation Concerns

Robin Shepard

University of Wisconsin

Madison, WI _____58

ACCESSING INFORMATION: TRADITIONAL AND NON-TRADITIONAL SOURCES

Calvin King

Arkansas Land and Farm Development Corporation

Brinkley, AR
Kim Kroll
 USDA-CSREES
 Washington, DC
Ron Macher
 Small Farm Today Magazine
 Clark, MO
Teresa Maurer
 Appropriate Technology Transfer for Rural Areas
 Fayetteville, AR _____60

5. **BUILDING INSTITUTIONAL CAPACITY TO SERVE SMALL FARMERS**

ON-FARM RESEARCH: INCORPORATING FARMER INNOVATION INTO THE RESEARCH STREAM

Guidelines for On-Farm Research
Dan Anderson
 College of Agricultural, Consumer and Environmental Sciences
 Department of Natural Resources and Environmental Sciences
 University of Illinois _____62

Lessons from the USDA Sustainable Agriculture Research and Education Program (SARE)
Jill Auburn
 USDA-CSREES
 Washington, D.C. _____65

Meeting Challenges in a Developing Production Area
Vincent Russo
 South Central Agricultural Research Laboratory
 Lane, OK _____66

ALTERNATIVE CROPS: RESEARCH NEEDS FOR SMALL FARMS

An Application of Systems Engineering for Small Potato Production
William M. Clapham
 Appalachian Farming Systems Research Center
 USDA-Agricultural Research Service
 Beaver, West Virginia _____68

Diversifying with New or Alternative Crops
Robert L. Myers
 Thomas Jefferson Agricultural Institute
 Columbia, MO _____70

MEETING THE RESEARCH NEEDS OF ORGANIC FARMERS

BIOS, BIFS, BASIS-OASIS: Acronyms for Success in Agricultural Research Partnerships
C.T. Bull
 USDA-Agricultural Research Service
 Salinas, CA _____73

Meeting the Research Needs of Organic Farmers: Learning from Experience
Kathleen Delate
 Iowa State University
 Ames, IA and
James Boes
 Heartland Organic Marketing Cooperative
 Greenfield, IA _____76

Meeting the Research Needs of Organic Farmers
Jane Sooby
 Organic Farming Research Foundation
 Santa Cruz, CA _____77

EVALUATION AND ACCOUNTABILITY: MODELS FOR SUCCESS

A New Agriculture for the New Millennium
Desmond Jolly
 University of California
 Davis, CA _____79

Evaluating Small Farm Programming in North Carolina
John M. O’Sullivan
 North Carolina A&T State University
 Greensboro, NC _____82

Overcoming Program Evaluation Challenges
Robin Shepard
 University of Wisconsin
 Madison, WI _____84

BUILDING STRONGER TIES FOR RESEARCH AND EXTENSION TO MEET SMALL FARMERS’ NEEDS

University of Missouri’s New “Focus Team” Approach to Setting Research and Extension Priorities and Programs
Joan Benjamin
 University of Missouri
 Columbia, MO _____88

Participatory Relationships: Recipes for Success
Judith F. Gillian
 New England Small Farm Institute
 Belchertown, MA _____93

Building Support for Small Farms and Sustainable Agriculture: Partnerships Between Community-Based Organizations and Public Institutions
Bonnie Rice
 Washington Sustainable Food and Farming Network
 Bellingham, WA and
Chris Feise
 Center for Sustaining Agriculture and Natural Resources
 Washington State University
 Pullman, WA _____94

6. GROWING THE SMALL FARM BUSINESS

ENTREPRENEURSHIP: A KEY TO SUCCESS IN ANY SMALL BUSINESS

Entrepreneurial Training for Small Farmers
Vaughn Rasar
 USDA-Natural Resources Conservation Service
 Newport, ME _____95

FARM FINANCIAL RISK AND BUSINESS PLANNING

Record Keeping for the Small Farm- a Management Specialist’s Perspective
Miles D. Robinson

Tuskegee University
Tuskegee, AL _____ 98

Managing Risk for Success

Randall Schwake

Security State Bank

Claremont, MN _____ 99

COOPERATIVES: A MUST FOR SMALL FARMERS

Rural Business and Cooperative Services' Role in Supporting Small and Beginning Farmers

Jeff Jobe

Rural Business and Cooperative Services

Des Moines, IA _____ 102

Cooperative Marketing of Alternative Meats in the Mid-Atlantic Region

Jennifer Thorn

University of Maryland Cooperative Extension

Mt. Lake Park, MD _____ 103

PLANNING NOW FOR FUTURE GENERATIONS OF SMALL FARMERS

James L. Gibson

Wisconsin Agribusiness Council, Inc.

Madison, WI _____ 104

Short-Term Initiatives, Paradigm Shifts, and Real-Time Impacts

Sue Ellen Johnson

Northeast New Farmer Network

Belchertown, MA _____ 105

Land Retention Project

Edward (Jerry) Pennick

Federation of Southern Cooperatives/Land Assistance Fund

East Point, GA _____ 106

7. NETWORKS THAT BRING TOGETHER FARMERS, SERVICE PROVIDERS AND CONSUMERS

FARMER-TO-FARMER NETWORKS

The Revolution and Evolution of Farmer Research in Montana

Jan Tusick

AERO Farm and Ranch Improvement Clubs

Montana _____ 108

BUILDING PARTNERSHIPS WITH THE ORGANIC COMMUNITY

A training Series in Organic Farming Systems for Cooperative Extension Service Agents

Nancy Creamer

North Carolina State University

Raleigh, NC _____ 109

Ten Points to Effective Partnership Between Farmers and Organic Consumers

Debbie Dunbar Ortman

Organic Consumers Association

Duluth, MN _____ 110

Paraprofessionals: Their Roles in Public and Private Sector Programs

Nathaniel Keys and Ronald Kelley

Cooperative Extension Program	
Prairie View A&M University	
Prairie View, TX _____	112

WORKING WITH NEW FARMERS IN YOUR COMMUNITY

Bringing New Farmers to Your Community

Calvin Graber

Ag Stewardship Committee of the Salem Mennonite Church

Freeman, SD _____ 113

Bringing New Farmers to an Area and Providing Assistance to Them

Richard Molinar

University of California Cooperative Extension

Fresno County, CA _____ 114

Access to Land: Farm Linking to Help New Farmers

Kathryn Z. Ruhf

New England Small Farm Institute

Belchertown, MA _____ 116

7. EXHIBITORS _____	118
POSTERS _____	122
LIST OF ATTENDEES _____	159

The Small Farm Revolution

John Ikerd

University of Missouri
Columbia, Missouri

American agriculture is in crisis. Until recently, the crisis had been a quiet one. No one wanted to talk about it. Thousands of farm families were being forced off the land, but we were being told by the agricultural establishment that their exodus was inevitable - in fact, was a sign of progress. Those who failed were simply the victims of their own inefficiency - their inability to keep up with changing times, their inability to compete.

But in fact it's not inefficiency or resistance to change that is forcing families to leave their farms. It's our collective obsession with our short-run self-interests. It's our worship of markets as the only true arbitrators of value. It's our acceptance of corporate greed as the only road to true prosperity. This crisis was neither inevitable, nor was it a sign of progress. The people of America need to know the truth. The time for quietness has passed.

With farm prices at record low levels for two years running, the agriculture establishment has finally begun to take notice. Congress has passed emergency farm legislation. But even now, the farm crisis is being blamed on such mundane things as "exceptionally good" global weather, problems in Pacific Rim financial markets, European trade restrictions, and an inadequate government "safety net." The crisis is a simple matter of supply and demand, they say.

The only solutions they propose are to tinker with government policy or, better yet, to simply wait for markets to recover. The only alternatives farmers are being offered are to get big enough to be competitive, get a corporate contract to reduce risks, or get out of farming. But getting big, giving in, or getting out are not the only alternatives. There are better alternatives for farmers and for society. The people need to be told the truth. The time for quietness has passed.

CHRONIC CRISIS IN AMERICAN AGRICULTURE

Crisis in agriculture is a chronic symptom of the type of agriculture we have been promoting in this country for the past 50 years. Reoccurring financial crises are the means by which we allow farms to become larger and more spe-

cialized so that consumers can have more cheap food - and the means by which we free people from the "drudgery of farming" to find better occupations in town. Or from another perspective, reoccurring crisis is the means by which we force farmers off the land.

The promise of profits lures farmers to buy into new cost-cutting and production-enhancing technologies, but the resulting increases in production cause prices to fall, eliminating previous profits for the innovators, and driving the laggards out of business. This technology treadmill has been driving farmers off the land for decades.

But the current crisis has an added dimension. The current crisis reflects a brazen attempt by the giant corporations to take control of agriculture away from family farms, to move beyond specialization and standardization, to centralize command and control - to complete the industrialization of agriculture. This final stage of industrialization is not only destroying the lives of farm families - it's polluting the natural environment, depleting the natural resource base, and destroying rural communities. The industrialization of agriculture is not good for America. The people need to be told the truth. The time for quietness has passed.

As I recall, the creed of the Future Farmers of America begins with the words "I believe in the future of farming with a faith born not of words but of deeds." For years I believed that creed and have spent much of my life trying to live by that creed, but I simply can no longer believe it is true. There is no future of farming - at least not farming as we have known it - if the current industrialization of agriculture continues. Every time the average farm size goes up, the number of farmers left goes down. Every time a farmer signs a corporate production contract, an independent farmer becomes a "corporate hired hand." With every corporate merger in the global food system, the future of farming in America grows dimmer.

The food and fiber industry most certainly has a future; people will always need food, clothing, and shelter; and someone will provide them. But there will be no future

for farming - not true farming - not unless we have the courage to challenge and disprove the conventional wisdom that farmers must get bigger, give in to corporate control, or get out. But there are better alternatives for farmers and for society. We must find the courage to challenge the conventional wisdom. People need to be told the truth about the future of farming. It's time for a revolution in American agriculture. The time for quietness has passed.

ROOTS OF CRISIS - ECONOMICS OF SELF-INTERESTS

What is happening in agriculture today is no different from what has already happened in most other sectors of the economy - at least not in concept. We are told that industrialization is the inevitable consequence of human enlightenment and technological progress. But the industrialization of agriculture is neither enlightened nor progressive. It is being driven by the same force that now threatens the integrity of our democratic society and the health of our natural environment - a blind faith in the economics of narrow, short-run self-interest. Industrialists have a deeply held faith that the promise of more profits, no matter how small, is the best means of allocating resources - whether it is allocation of people among alternative occupations, land among alternative uses, money among investments, or people among communities. All things that are possible and profitable are done in the name of economic progress.

However, the science of economics was never meant to be limited to the pursuit of the narrow, short-run self-interest of individuals. Adam Smith proclaimed more than 200 years ago, in his *The Wealth of Nations*, that pursuing individual self-interests results in the greatest good for society as a whole - "as if by an invisible hand." Smith's words revolutionized economic thinking and remain the foundation for conventional economic thought. But Smith certainly did not claim that only the narrow self-interests of individuals were important. Instead, he simply observed that the broad interest of society in general seemed to be well served in the process of individuals pursuing their own short-run self-interest. Pursuit of self-interest seemed but a convenient means to a far nobler end.

Smith's invisible hand probably worked reasonably well 200 years ago - given the economy and society of that time. Most economic enterprises were small family operations. For such operations, land, labor, capital, and management often resided in essentially the same entity. Farming was still the dominant occupation. Few enterprises were large enough to have any impact on the marketplace as a whole. It was fairly easy for people to take on a new enterprise that seemed profitable and to drop one that

seemed to be losing money. Thus, profits were quickly competed away and losses didn't persist for long in highly competitive local markets. In general, communications between individual producers and consumers were clear back then because their connections were simple and often personal. All of these things were essential in the transformation of pursuit of self-interests into societal good.

In Smith's times, human populations were small enough and technologies were sufficiently benign that people could have little permanent impact on their natural environment - at least not on a global scale. Back then, strong cultural, moral, and social values dictated the norms and standards of "acceptable" individual behavior. Smith could not conceive of a society in which the welfare of the poor and hungry would not matter, or where people in general would behave in unethical or immoral ways. "No society can surely be flourishing and happy, on which the far greater part of the members are poor and miserable" (p. 36).

In the environment of 200 years ago, when conventional economics was born, pursuit of self-interest might have served the interests of society reasonably well. But the world has changed over the past two centuries. Today most sectors of the U.S. economy are dominated by large corporate enterprises. Corporations are inherently non-human entities - regardless of what the Supreme Court has said and regardless of the nature of their managers and stockholders. The resources of land, labor, capital, and management are now separate, sometimes divided even among nations. And corporate profits are far larger than any concept of "normal" profit envisioned in classical economics. Producers and consumers have become disconnected, geographically and conceptually, as a consequence of industrialization. Consumers no longer have any personal knowledge of where their products come from or of who is involved in their production. They must rely on a complex set of standards, rules, and regulations for product information, and today's advertising consists of "disinformation" by design.

In today's society there are no logical reasons to believe that pursuit of self-interests is the best means of meeting the needs of society. But powerful economic and political interests have tremendous stakes in maintaining the belief in an "invisible hand." It justifies their selfishness and greed. It legitimizes their endless accumulation of economic wealth. Thoughtful economists know the assumptions which must hold for truly competitive markets are no longer valid. But few have the courage to speak out. The

economic assumptions of 200 years ago are no longer adequate. It's time to rethink the economic foundation for our society. We need to face up to the truth.

In addition, human activities are no longer ecologically benign - if they ever really were. The pressures of growing populations and rising per capita consumption are now depleting resources of the land far faster than they can be regenerated by nature. Wastes and contaminants from human activities are being generated at rates far in excess of the capacity of the natural environment to absorb and detoxify them. Fossil fuels, the engine of 20th century economic development, are being depleted at rates infinitely faster than they can ever be replenished. Human population pressures are destroying other biological species, upon which the survival of humanity may be ultimately depend.

The human species is now capable of destroying almost everything that makes up the biosphere we call Earth, including humanity itself. The economics of Adam Smith didn't address environmental issues, and neither does the free market economics of today. We need to face up to the truth.

Social and ethical values no longer constrain the expression of selfishness. The society of Smith's day was weak on economics - hunger, disease, and early death were common - but it had a strong cultural and moral foundation. However, that social and ethical foundation has been seriously eroded over the past 200 years - by glorification of greed. Civil litigation and criminal prosecution seem to be the only limits to unethical and immoral pursuit of profit and growth. Concerns of the affluent for today's poor seem to be limited to concerns that welfare benefits may be too high or that they will be mugged or robbed if the poor become too desperate. Smith's defense of the pursuit of self-interest must be reconsidered within the context of today's society - a society that is now strong on economics but weak on community and morality. We need to face up to the truth.

The economic theories of two centuries are no longer relevant to the world of today. The pursuit of greed no longer creates societal good - it simply encourages more greed. The greedy now have control of the economy and of much of society. And, they won't give up without a fight. It's time for a new revolution in America - a revolution that will free people from the tyranny of the economics of short-run self-interests. The new revolution will require a rethinking of and a direct challenge to the fundamental

principles that underlie conventional economic thinking - line by line, row by row, from the ground up. Any effort that fails to attack the problem at its root cause ultimately is destined to fail. The root cause of the current crisis in agriculture is the same as the root cause of ecological degradation and of social and moral decay of society in general - a society that blindly accepts the economic bottom line as if it were the word of God. It's time to face up to the truth in America. The time for quietness has passed.

SUSTAINABILITY - THE NEW REVOLUTION

This new American Revolution is being fomented under the conceptual umbrella of "sustainability." In farming, we talk about the sustainable agriculture movement, but there are also movements in sustainable forestry, sustainable communities, sustainable development, and sustainable society in general. The sustainability movement presents a direct challenge to conventional economic thinking. Sustainability includes concern for self-interests, but it goes beyond to protecting interests that are shared with others, and the interests of future generations in which we have not even a share. All of the sustainability movements share a common goal, to meet the needs of the present while leaving equal or better opportunities for those to follow - to apply the Golden Rule across generations.

There is a growing consensus among those marching under the banner of sustainability that for anything to be sustainable it must be ecologically sound, economically viable, and socially responsible. All three are necessary, and none alone nor any pair of two is sufficient. Economic viability is about self-interest, social responsibility is a matter of shared interest, and ecological soundness ultimately is an ethical or moral responsibility that we choose to accept for purely altruistic reasons. Self-interest, shared interests, and altruistic interests are all considered positive and worthy of pursuit. Thus, the pursuit of sustainability is a pursuit of "enlightened self-interests." Without this enlightenment, we will not choose long-run sustainability over short-run greed.

The sustainability revolution is not one that will be fought on the battlefield, in the streets, or even necessarily in the halls of Congress. Instead, it's a battle for the hearts and minds of the American people. We need to tell people the truth about what is happening in America today and why. We need to tell them the truth about the need for a new economics of sustainability - an economics that will sustain people and protect the environment, not just promote industrial development and economic growth. And we need to give them common sense reasons why the old sys-

tem cannot be sustained, and why a new sustainable system is not a luxury but an absolute necessity. We need to talk boldly about the need for a new economics of enlightenment. The time for quietness has passed.

SUSTAINABILITY AND SMALL FARMS

Agriculture may well be the field upon which the battle for the hearts and minds of Americans is fought - at least initially. The best hope for building a sustainable society may be to begin by building a more sustainable agriculture - for without a sustainable agriculture, human life on earth is not sustainable. The best hope for building a more sustainable agriculture may be to begin by ensuring the future of smaller farm families - for without farmers, agriculture cannot be sustained. Corporate hired hands may be good people, fully deserving of dignity and respect, but they are not farmers. A corporately controlled, large-scale, industrial agriculture simply is not sustainable.

Sustainable farms will not only be independently owned, but they will be smaller farms as well. Sustainable farming is a product of balance, or harmony, among the ecological, economic, and social dimensions of a farming system. A smaller farm lacking this harmony is less likely to be sustainable than a larger farm that is more in harmony. But there are logical reasons to believe that balance and harmony will be easier to achieve with - if not absolutely require - a large number of smaller farms rather than a small number of large farms.

Nature is inherently diverse. Geographic regions are different, watersheds are different, farms are different, and fields are even different - both among and within. Industrial agriculture treats fields, farms, watersheds, and even regions as if they were all pretty much the same. Certainly industrial systems can be fine-tuned a bit here and there to make production practices of one region fit another. Each state has a bit different set of best management practices, and some further adjustments are made from farm to farm and field to field. But the fundamental systems of conventional production are all pretty much the same.

The same breeds and varieties, fertilizers and feeds, pesticides and antibiotics, machinery and equipment, and business and marketing strategies are used across fields, farms, and watersheds, in all regions of the country. The goal of research is to find universal solutions to common problems - to find ways to twist, bend, and force nature to conform to some universal production and distribution process. Industrial, large-scale mass production requires this type of

uniformity. Biotechnology is but the latest in a long string of futile efforts to force uniformity upon nature.

But nature is diverse. Large-scale production creates inherent conflicts with this diverse nature - and inherently threatens sustainability. Farms that conform to their ecological niches avoid such conflicts. Some ecological niches may be large, but most are quite small. Current concerns for agricultural sustainability are based on strong and growing evidence that most farms have already outgrown their ecological niches and could be more sustainable if they were smaller.

Sustainable farms must also be of a size consistent with their markets. Conventional wisdom is that most markets are mass markets, and, thus, farms must be large - or if not must market collectively. The conventional wisdom is wrong. Markets are made up of individual consumers, and as consumers - as people - we are all different. We don't all want the same things. In fact, each of us actually prefers something just a little bit different and, thus, values the same things a bit differently.

Mass markets are created by lumping together a lot of people who are willing to accept the same basic thing - even though they might not prefer them. If mass markets can be created, the food system can be industrialized, and dollar and cent food costs will be lower. The lower price is a bribe to consumers to accept something other than what they actually would prefer. Typically, they must be coerced as well as bribed to accept what the industrial system has to offer. That's why Americans spend more for advertising and packaging of food than they pay the farmer to produce it. It costs more to convince people to buy industrial food products than it does to produce them.

Eighty cents of each dollar spent for food goes for processing, transportation, packaging, advertising, and other marketing services. One key to economic sustainability of small farms is to capture a larger share of the consumer's food dollar by performing some, and bypassing others, of these marketing services. Farmers currently get only about 10 cents of each food dollar as a return for what they contribute to production; the other 10 cents goes for purchased inputs. By tailoring production to consumer niche markets, and selling more directly to consumers, small farmers have an opportunity to make more profits without becoming big farmers.

The conventional wisdom is that niche-marketing opportunities are limited and can support only a handful of farm-

ers. Once again, the conventional wisdom is wrong. Since all people want something slightly different, the ultimate in niche marketing would be to give every individual precisely what he or she wants. All consumer markets are made up of individuals - totally, not just in part. Thus, all markets in total are made up of niche markets. The question is not how many niches exist, but instead how many different niches does it make sense to serve? The relevant answer, at least at present, is that more than enough market niches exist to support as many small farmers as might choose to direct-market to consumers. A lack of niche markets need not place a lower limit on the size of farms. Farms can be as many and as small as needed to accommodate the ecological niches of nature.

The most compelling argument in support of sustainable farms being smaller is that sustainable farms must be more "intensively" managed. Wendell Berry puts it most succinctly in his book *What Are People For*: "...if agriculture is to remain productive, it must preserve the land and the fertility and ecological health of the land; the land, that is, must be used well. A further requirement, therefore, is that if the land is to be used well, the people who use it must know it well, must be highly motivated to use it well, must know how to use it well, must have time to use it well, and must be able to afford to use it well" (p. 147). Intensive management is possible only if farmers have an intensive relationship with the land - if they know it, care about it, know how to care for it, take time to care for it, and can afford to care for it - only if they love it.

Industrialization degrades and destroys the relationship between the farmer and the land. Industrialization is management "extensive." Specialization, standardization, and centralization allow each farmer to cover more land, supervise more workers, and handle more dollars. Industrial management is "extensive" in that each manager is able to manage more resources. Extensive management makes it possible for each farmer to make more profits in total, even if profits per unit of production are less. But, as the attention of each farmer is spread over more land, more laborers, and more capital, each acre of land, each worker, and each dollar receives less personal attention. The relationship of the farmer with the land, and with the people of the land, is weakened. If the large farmer no longer knows the land, no longer cares about it, forgets how to care for it, doesn't have time to care for it, or can't afford to care about it, how well will the land be used? How can it remain productive? How can a large farm be sustainable? A small farm can be managed "intensively." Intensive management allows a farmer to manage less land, using

less labor, while handling fewer dollars. By managing fewer resources more intensively, the farmer is able to make more profit per unit of output and, thus, make more total profits - even if total production or output is less. As the farmer has more time and attention to give to each acre of land, each worker, and each dollar, the farmer's relationship to the land and the people of the land is strengthened. The small farmer has an opportunity to know the land, to care about it, to learn how to care for it, has time to care for it, and can afford to care about it. The land on a small farm can be used well and can remain productive. A small farm can be sustainable.

The fundamental purpose of farming is to harvest solar energy - to transform sunlight into food and fiber for human use. It might seem that even God favors the larger farmer because a large farm covers more space, thus, catching more sunshine and rain. But God also has given us a choice of making either wise or foolish use of the gifts of nature with which we are entrusted. Our industrial agriculture currently uses more energy from fossil fuels than it captures in solar energy from the sun. This can hardly be deemed wise and efficient use. But, as a consequence, a small farmer can be more economically, socially, and ecologically viable than a large farmer, simply by being a more effective harvester of the solar energy. In essence, a more intensive manager is a better harvester of the sun.

Some ecosystems and farming systems are easier to manage effectively than are others and, thus, require less attention per unit of resources to manage sustainably. Those requiring less intensive management can be larger without sacrificing sustainability. For example, a sustainable wheat/forage/cattle farm may be far larger than a sustainable vegetable/berry/poultry farm. But the sustainable wheat/forage/cattle farm is likely to be far smaller than the typical specialized wheat farm, forage farm, or cattle ranch. And the sustainable vegetable/berry/poultry farm is likely to be far smaller than the typical specialized vegetable farm, berry farm, or poultry operation.

Sustainable farms need not be small in terms of acres farmed or total production, but they need to be managed intensively. And intensively managed farms will be smaller than will otherwise similar farms that are managed extensively. Neither land nor people can be sustained unless they are given the attention, care, and affection they need to survive, thrive, and prosper. That attention, care, and affection can be more easily given on a smaller than larger farm.

The best alternatives for American farmers are neither to get bigger, nor give in to corporate control, nor to get out. The best alternative for American farmers, and for society in general, is for farmers to find ways to farm more sustainably - to balance economic, ecological, and social concerns; to find harmony among self-interests, shared interests, and altruistic interests; to pursue their "enlightened" self-interests instead of greed. American farmers need to be told the truth about their alternatives. Farms of the future must be smaller, not larger. It's time for a revolution in American agriculture. The time for quietness has passed.

IT'S TIME FOR A NEW AMERICAN REVOLUTION

About a year and a half ago, I found myself recovering from unanticipated open-heart surgery. I was fortunate enough to have previously checked out a book, *The Life and Major Works of Thomas Paine*. Thomas Paine, as you may recall from your history lessons, was a writer during the American Revolution. He was credited with articulating the ideas of the revolution in terms that could be understood by the "common man." In fact, he signed his early writings with the pen name "Common Sense." Paine's pamphlets were distributed widely throughout the colonies and invariably regenerated public support for the cause of democracy - saving the revolution from failure on more than one occasion. The writings of Thomas Paine provide some valuable insights into how to keep a revolution from failing - at least when the cause makes common sense.

First, Paine gave no quarter to the enemy of freedom and democracy - the British monarchy. Nothing in Paine's writings could be mistaken for impartial objectivity when he was critiquing the sins of the monarchy. He stuck with facts and stated the truth, but he bothered with only one set of facts and one side of the truth. He left out some of the facts, the other side of the truth, and the lies to be told by his opponents - the Loyalists, who opposed the revolution.

Second, Paine's papers always went beyond criticism. He always went on to extol the great benefits that would be realized by the colonies once they had shed the yoke of Great Britain. He painted a vision for the future of a free and democratic America. He countered each British claim of what the colonies would lose with a counter-claim of what the colonies would gain once they had won the Revolution.

Finally, Paine's writings never gave so much as a hint of doubt that the American colonists eventually would win

their war for independence. When the British army occupied Philadelphia, for example, Paine called it clear and convincing evidence that the British could never win the war. If half of their army was required to hold just one town, how could they possibly control all of the vast regions of the American colonies? It was just plain "common sense" - the cause of the Revolution could not be denied.

We need a Thomas Paine approach to the new movement to revolutionize American society. I am not talking about gradual, incremental change in practices and methods of doing business; I am talking about a fundamentally different philosophy of life. The differences between the industrial and a post-industrial society will be as great as the differences between monarchy and democracy.

The current enemy is not a misguided monarchy but instead is a misguided economy. The tyranny is not a kingdom, but instead is the marketplace. The epitome of the economics of greed is the publicly held industrial corporation. The publicly held corporation has no heart, it has no soul, and it is motivated solely by profit and growth. Corporations pollute and waste natural resources, and they degrade and use up people - and they will corrupt any political process that attempts to keep them from doing either. Anything that has no value in the marketplace is worthless to the corporation. The people who work for corporations have no choice but to feed the unending corporate hunger for every greater profits and ever faster growth.

Corporate industrialization will do for agriculture what it has done for other sectors of the economy. It will pollute the natural environment - the water, the soil, and the air. Farmers and farm workers, like factory workers, will suffer ill health, low pay, and eventual abandonment - as agri-industries find other people in other places who will work even harder, in more dangerous environments, for even less pay. The safety and healthfulness of the food supply will continue to deteriorate as a consequence of the inevitable race to the bottom, to see which corporation can produce the most stuff cheapest, so they can drive the competition out of business and raise prices to whatever level they choose.

But the industrial era is over. The era of information and knowledge is upon us. Knowledge and information are quickly replacing capital as the source of new productivity and wealth. Potential productivity is now embodied in the unique ability of people to think and create, not in raw

materials and factories. The main reason corporations continue to consolidate and grow is to gain greater economic and political power - to exploit workers, taxpayers, and consumers so they can continue to show profits and grow. In the industrial era, bigger seemed to be better. But, in the new post-industrial era, small may be smarter. We are living in a new era of human and economic development.

Small businesses allow people to express their individuality and creativity - to use their unique abilities to think and create. The good paying new jobs in the general economy are being created by small businesses, while the old industrial giants continue to downsize and lay off workers by the thousands. If the future is to be better than the past, it must belong to the small, not the large. The future of farming belongs to the small farms, not to the large. The people need to be told the truth.

Small farms allow people to fit their uniqueness to their ecological niche and to the unique tastes and preferences of consumers. Small farms are management intensive - they allow farmers to rely more on themselves and less on borrowed capital and rented land. Intensive management allows farmers to break away from chronic crisis - to get off the treadmill of larger and fewer, which requires the survivors to run faster and faster just to stay in the same place. Small farms can be real farms - where farmers have the time and the money to take care of their families, their land, and their communities. Small farms allow people to live in harmony again - with themselves, their neighbors,

and the things of nature. Small farms can be farmed sustainably - benefiting farm families, rural communities, the natural environment, and society in general.

There is a better way to farm and a better way to live. It's time for a revolution in American agriculture. The time for quietness has passed.

Sustainability requires diversity, flexibility, site specificity, and decentralized decision making. Farms of the future must be as small as the ecological niches to which they must conform to be in harmony with the diversity of nature. Farms of the future must be as small as the market niches to which they must conform to be in harmony with the diversity of human nature. The only farms with a future will be farms that are sustainable - that are economically viable, ecologically sound, and socially responsible. Thus, farms of the future will be smaller farms. The inevitability of the industrialization of agriculture is a lie. Sustainable small farms are a better alternative than getting bigger, giving in, or getting out. The American public must be told the truth. It's time for a small farm revolution in American agriculture. The time for quietness has passed.

Marketing Strategies for Small Farms: Missouri Goats First on Internet Auction

Emmanuel I.S. Ajuzie, Ph.D.

Lincoln University Cooperative Extension
Jefferson City, MO

REASONS FOR FOCUSING ON MARKETING STRATEGIES:

1. Labor Income

In the decade of the nineties, we have witnessed a gradual rise in labor income of the manufacturing, service, and information sectors of the economy. This has followed a past trend and if that past is anything to go by, we will continue to expect labor income to rise over time. Things are quite different in the agricultural sector, especially for the small farmer. Labor income for the small farmer particularly, and the agricultural sector generally, has either remained stagnant or decreased over time. In other words, rate of return to labor and total income in the agricultural sector are comparatively low. The disappearance of small family farms and farmers in the country can be attributed to these reasons and many more.

2. Competitive Advantage

Competition in the agricultural sector between large and small farms places the latter at a great disadvantage. Because of the disparity in the volume of products produced, prices are so low that the small farmer hardly makes any profit selling in the same marketplace as the large farmer. On top of that, rates of return to agriculture are low compared to other economic sectors. Additionally, agricultural commodity prices decline in real terms over time. The impact of all of this is always harsher on small family farmers.

3. Investment Infrastructure and Commodity Policies

Agricultural infrastructure investments and commodity policies are known to favor larger farms than smaller ones. For example, the various land reservation programs and crop subsidies have always been known to benefit larger farms. Because small farmers do not have enough land resource, they fail to participate in such programs. Different government projects, such as water in Western United States and elsewhere, have always been advantageous to large farms as opposed to small ones.

4. Inaccessible Factor Markets

Factor markets in agriculture include productive input and loan funds markets. These markets are in most cases out of reach for small farmers. For productive inputs, prices are prohibitive and in most cases, small farmers may not need the heavy equipment in the market. In order to secure loans for farm operation, financial institutions, like the bank, may require collateral, which the small farmer cannot afford.

Based on the above, small farmers are encouraged to adopt alternative marketing strategies for sustainability both economically and socially.

OBJECTIVES OF A FARM OPERATOR:

The small farm operator needs well-defined objectives in order to counter the negative effects of the adverse conditions that militate against him as briefly stated above. Some of these objectives are as follows:

1. To know who the competition is.
2. To find new customers.
3. To open new markets.
4. To improve exposure to the product.
5. To improve customer service.
6. To increase profit margins.

The farmer can achieve these objectives wisely through cooperation, with other farmers, to avoid steep competition among themselves. Because of the perfect competitive nature of the agricultural sector, such competition can only lead to reduction in prices of farm products. This scenario will further impoverish small farmers, leading to continuous failure of small family farms.

CONVENTIONAL (DIRECT, ETC.) MARKETING STRATEGIES:

1. Location is very essential

The location of a market or any business, for that matter, determines whether or not the operation will succeed. A farmer has to find a good location for the type of market he desires to establish. The factors that are important in

determining if a location is good or not include the following: the nearness of the market or operation to main transportation arteries, accessibility of the location to customers, availability of parking spaces at the location, and attractiveness of the location to customers. To further emphasize the importance of location, one can say that the three essential determinants of the success of a market are location! location! location!

2. Increase price and sell more of the product

The farmer should know his market in such a way that he/she can find ways to increase the prices of his/her products and still sell more. This could be achieved by product differentiation through labeling and packaging, at minimal additional cost relative to increases in revenue.

3. Advertisement

Success in marketing a farmer's product(s) also depends on how the farmer advertises. He should be able to advertise his product(s) using different news groups, local stores, civic events, church groups, and word-of-mouth. It may not be advantageous to advertise through any group that is in direct competition with a farmer.

4. Sell value not price

The farmer should make sure that his/her product is of high quality. This general product characteristic makes the product valuable to customers. Once quality is high, customers in the community would be drawn to the farmer by word-of-mouth and he/she can ask for higher prices without driving away customers and potential customers.

5. Know the size of the market for the product

In order for a farmer to establish a reasonable price, it is recommended that he determines the size of the market for the product in question. If, for example, the size is large relative to supply, he/she can afford to raise the price of the product given that it is of high quality.

6. Pricing the product

The product should be priced based not only on cost and demand or size of the market, but also on the economic and emotional value to customers. It means that, in addition to some other factors that go into price determination, the farmer should attempt to find out the eco-

nomical and emotional value of his/her product to customers.

7. Good marketing communication with customers

A farmer, who wishes to market his/her product successfully, should be able to have good customer relations. In other words, he/she should be able to communicate well with customers. Some of them are, at times, looking for someone to listen to them. It is through these interactions that one can discover, among other things, the value of the product to these customers.

8. Use services to increase sales

It will help to attract customers to a market if the operator can go the extra mile by providing some services to his/her customers, especially the elderly. It may be in the form of helping them to put purchased products in their vehicles. These services keep customers coming back. They may even recommend the market to friends and acquaintances.

9. Networking is important

The importance of networking among small farmers cannot be overemphasized. It is through this process that they can find where demand for certain products is high. They can discover the going prices for various products, especially the ones that pertain to individual farmers. They can learn the latest profitable marketing methods and production practices.

10. Product promotion

Distribution of new recipes that use a farmer's product is a way of inviting customers to buy and try his/her product. Once they like the taste, the word will spread and there will be an increase in demand for the product. This same objective could be achieved by using the recipes to prepare food to be served at civic or church events. The farmer should call attention to the food and be prepared to hand out the recipes there.

11. Community building through Community Supported Agriculture (CSA)

This is another strategy for increasing the size of a market for a particular product. It also helps to build community understanding and relationships. It is based on trust for everyone within the community.

USE OF MARKETING EVENTS AS STRATEGIES:

Other strategies for successfully assisting small farmers to market their products could be placed under "marketing events." These include, but not limited to, the following:

- Use natural and other on-farm resources to attract customers.
- Recreation and alternative enterprises for economic sustainability, e.g., scenic tours
- Value-added product display events
- Pick-your-own activities
- On farm experiences
- Cultural heritage appreciation
- Bird watching, especially for ranchers
- Farm dinners
- Pumpkin harvesting
- Craft making/sale
- Apple and cherry blossom
- Building community through (CSA)
- Networking

Through these efforts, farmers sell livestock and crops and increase their profits by selling services, adventure experience, and value-added agricultural products.
Benefits of Good Marketing Strategies:

Good marketing strategies have been known to provide exceptional benefits to small farmers. These include the following:

- Increase in sales
- Improved service and customer satisfaction
- Improvement in community building and relations
- Reduction in costs
- Expansion of marketing opportunities
- Expansion of customer-base
- Increase in profit margins
- Increase in youth attraction into agriculture
- Increase in quality of life of farm families and communities
- Reduction in the loss of prime farmland

**NEW AND IMPROVED MARKETING:
MISSOURI GOATS FIRST ON INTERNET AUCTION**

In 1998, the Lincoln University Cooperative Extension marketing program, under the auspices of the state marketing specialist, Emmanuel Ajuzie, formed a Missouri

Goat Marketing Committee to explore the opportunity of marketing goats from Missouri through Internet auction. On July 16, 1998, in collaboration with Equity Livestock Cooperative (Equity) based in Baraboo, WI, Missouri became the first to auction off goats on the Internet as done at sale barns. A second sale took place on December 16, 1998. These sales were made possible because of more than 75 years of Internet marketing of livestock, except goats, by Equity. It was easy to use their infrastructure to test the market for goats and it proved to be a success.

Within that first year, more than 800 head of goats were sold. The following table will provide a clue to the initial success of this venture:

PRICES OF LIVESTOCK AT 1998 AUCTION MARKETS

- Electronic Goat Market
July 16, 1998
1. Top Kid
\$59.50 per head
 2. Culls
29.00 per head

- December 16, 1998
1. Top Kid
\$72.25 per head
 2. Culls
\$35.00 per head

The disparity in prices between the two dates above was due to a seasonal factor and event. During Christmas Holidays, the demand for goats usually increases significantly and given a seemingly constant supply, price rises. Another season when a similar trend occurs is during Easter.

GOAT CONSIGNMENT PROCEDURE:

In order to sell on Internet auctions, goats are consigned prior to the sale date. Below is the procedure for the consignment of goats:

1. Call Equity toll free at 1-800-362-9322.
2. Consign goats during the week before pool day, no later than Thursday at 4:00 p.m.
3. Consignments are taken on a first-come, first-serve basis until the load(s) is full.
4. Goats are sold in load units of 500 head or 40,000 pounds.

A producer will be asked to describe his goats accurate-

ly. Equity will ask several important questions, such as:

1. *Which pool date and location do you prefer?*
2. *An owner's name, address, and phone number.*
3. *How many head of goats are you consigning?*
Breed or cross breed of goats. Example: Boer or Boer cross, Spanish, Dairy, etc.
4. *What is the average weight?* Example: -- 25
Boer cross kids, average weight 60 lbs. each.
15 head cull angora nannies, average weight 70 pounds each.
5 head adult buck, average weight 120 pounds each.
5. *What is the weight range?* Example:
25 Boer cross weighing between 60 and 70 pounds each.
15 head cull angora nannies weighing 70-80 pounds each.
5 head adult buck weighing 120-160 pounds each.
6. *What is the sex of the animals?* Both sexes are acceptable. For example, castrated or non-castrated, horned or non-horned.
7. *What are the ages of the goats you are consigning?*
8. *When did you last deworm your goats and apply other types of medication?*
9. *Are your animals healthy?* Quality is important. Sick ones are not acceptable.

ACCEPTANCE PROCEDURE:

1. Call Equity the day after the Internet auction.
2. You will be given the final selling price.
You must confirm your intent to accept the price and deliver your animals to the pool location.
This is a prearranged place where the goats will be picked up by their buyers. Have a reasonable price expectation.

DELIVERY AND GRADING PROCEDURE:

1. Producers will be given the exact location or collection station along with sale dates.
Location may vary from sale to sale. It is selected with the intention of reducing transportation time and cost to producers.
2. For grading, the producer makes sure that the consigned animals are presented. If there is a dispute, discuss it with the grader. If not satisfied, please bring it to the attention of the Lincoln University Cooperative Extension marketing program and ask for Emmanuel Ajuzie.

3. After the animals are weighed, the producer will be given a weigh ticket for his/her record.

PAYMENT PROCEDURE:

Equity will issue a check in the name of the producer based upon his/her weigh ticket, less the commission as will be specified for him/her in advance by Equity through the Missouri Goat Marketing Committee. Experience has shown that Internet goat auction is a promising marketing strategy for small farmers. One of the many outstanding benefits of the program is the elimination of expensive transportation costs incurred by producers who had traveled many hours (long distances, sometimes more than 700 miles) to sell their animals.

The Evolution of Farm Direct Marketing - Traditional and New Approaches

Monika Roth

Cornell Cooperative Extension
Ithaca, New York

Farmer-to-consumer direct marketing, a common means of marketing at start of this century, became the exception by mid-century. Over the past 30 years, farm-direct marketing has re-emerged, fueled by a number of factors - the oil crisis, changes in supermarket purchasing, the "back-to-the land" movement, and changes in consumer demographics and shopping habits.

Since its rebirth, farm-direct marketing has evolved in two directions - from farm stands to entertainment farms, and from card tables to haute cuisine. Farm-direct marketing is no longer just pick-your-own farms and roadside stands - it now includes a diversity of marketing methods such as year-round food markets, on-farm restaurants, farmers markets, direct to restaurant sales, CSA farms, mail order, agri-tourism, and entertainment farms.

While there has been significant growth both in numbers and diversity of enterprises, the data to document the growth of direct marketing is weak. As direct marketing has evolved, it has become more competitive and more complex, hence posing increasing challenges including narrowing margins, higher business costs, staying on top

of consumer interests, and constantly innovating.

Future success in direct marketing will depend in part on strong consumer support and a stable economy. Concentration and globalization of the food supply provide opportunities for direct-market farmers who can be flexible in meeting changing consumer interests.

Direct Marketing Activities in USDA/AMS

Eileen Stommes

Deputy Administrator
USDA-Agricultural Marketing Service
Washington, DC

To start, I'll give you three primary reasons why USDA's Agricultural Marketing Service is focusing on direct marketing.

- The 1996 Farm Bill focused on marketing, particularly on export markets, as commodity support programs are phased out. USDA is now placing increased emphasis on marketing.
- The Small Farm Commission report identified marketing as a critical issue in the continued viability of small farmers. The Commission recommended that USDA emphasize marketing, citing the loss of marketing channels for small farmers as a particularly significant issue.
- Consumers are increasingly interested in buying products directly from farmers. The explosion of farmers markets, roadside stands, pick-your-own operations, catalogue sales, and other direct marketing throughout the country demonstrates this fact.

For these reasons, AMS is focusing on direct marketing. We have worked in direct marketing for several years, particularly in farmers markets and public markets. Our efforts today enhance and expand upon the technical assistance we have traditionally provided.

We began our current small farm direct marketing initiative in August 1998 with the implementation of our Farmer Direct Marketing Action Plan, built upon recommendations in the Small Farm Commission Report (January 1998) to identify USDA's role in supporting marketing opportunities for small farmers. The Plan is designed to enhance small farmers' ability to thrive in their businesses by facilitating the marketing of their agricultural products. The initiative also defined a collaborative approach for leveraging resources with other USDA agencies.

Four objectives outline the AMS direct marketing strategy:

- Identify farmer direct marketing issues and opportu-

nities for small farmers.

- Promote farmers markets and other marketing activities that support small farmers.
- Serve as a one-stop information source for farmer direct marketing activities.
- Conduct, support, and promote research in farmer direct marketing.

AMS has made substantial progress in meeting these objectives.

1. Focus Group Study-We are finalizing a report on five regional focus group seminars, conducted to fulfill the first objective of the Farmer Direct Marketing Action Plan - to identify farmer direct marketing issues and opportunities through public input. The report, Direct Marketing Today - Challenges and Opportunities, outlines strategies for expanding AMS direct marketing activities using the results of the focus group sessions with marketers and representatives from organizations that support direct marketing.

Locations for the groups - the Northeast, Midwest, and Southeast - were selected to contrast regional differences in production and marketing practices of small producers and the issues faced by service providers who facilitate direct marketing programs. Sessions helped gain a broad understanding of the challenges and opportunities of direct marketing, including how producers use direct marketing channels, recurring problems, information gaps, expansion prospects, and how USDA can enhance direct marketing.

I'll highlight three key findings. First is where direct marketers get their information. Contacts/networking is first, followed by conferences, growers, and trade associations. Key problems of direct marketers include producer perceptions of cost, followed by regulations and technical assistance/grants. Last, we asked about the USDA involvement in direct marketing. Data collection and applied research ranked number one, followed by "how to" manuals and small producers selling to school

districts.

2. Farmers Market Directory-We publish a directory of more than 2,700 farmers markets, including a summary of market locations, contacts, telephone and fax numbers, days and hours of operation, and participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and food gleaning/food recovery.

3. USDA-Sponsored Farmers Markets-These markets began in 1996 and operate at USDA headquarters, the USDA Beltsville office facility, and the Departments of Labor and Transportation. They are part of USDA's commitment to develop effective direct marketing strategies for small farmers.

4. USDA Agricultural Marketing Service Farmers Market Hotline-We established an 800 telephone number (800-384-8704) to provide information on the Farmers Market directory and the USDA-sponsored farmers markets on Federal property.

5. AMS "How To" Brochure-"How to Establish a Farmers Market on Federal Property" is a brochure developed to address issues associated with organizing a market on federal property. It lists guidelines and procedures to follow to establish a successful market.

6. Farmer Direct Marketing Bibliography-The bibliography lists publications dealing with the setup and operation of farmers markets, roadside stands, pick-your-own operations, and community-supported agriculture, as well as surveys/analyses of consumers and vendors, marketing plans, production, small farmer concerns, and legal issues.

7. Farmer Direct Marketing Home Page-This Web site provides a range of USDA and non-USDA resources and information. It can be accessed at www.ams.usda.gov/directmarketing.

FY/2000 Program Planning/New Initiatives
Recommendations in a focus group report, *Direct Marketing Today - Challenges and Opportunities*, have helped to shape several new projects this year. These initiatives, plus several ongoing projects, establish an ambitious agenda for direct marketing activities in AMS.

Develop a detailed national directory of farmer direct marketing associations.

- Develop a series of manuals on startup and expansion of direct marketing associations as a means of facilitating farmer direct sales to consumers. This project draws directly from the focus group feedback on networking and contacts with other growers.
- Develop a technical workbook to assist farmer direct marketers in making decisions relative to market channel alternatives, business direction, and diversification strategies.
- Develop a series of "How To" manuals to target specific areas of farmer direct marketing.
- Conduct a comprehensive survey of farmer direct marketers in a major direct marketing state to study the contribution of direct marketing to farm entry and farm viability.
- Develop an electronically available training program for managers of farmers markets and marketing information programs for small farmers.
- Continue expansion of new direct marketing networks and identify and respond to marketing issues affecting small farmers by sponsoring workshops, exhibits, and training sessions.
- Maintain a current directory of all active farmers markets on the Internet, with a new directory published biennially.
- Conduct new feasibility studies for developing year-round farmers market facilities and other seasonal direct marketing operations.
- Implement long-range initiatives for farmer direct marketing research and technical assistance as recommended in *Direct Marketing Today - Challenges and Opportunities*.
- Promote increased participation by limited-resource, women-owned, and/or minority-owned farms in direct marketing.

FEDERAL STATE MARKETING IMPROVEMENT PROGRAM (FSMIP)-The Federal-State Marketing Improvement Program (FSMIP) provides matching funds, on a competitive basis, to State departments of agriculture or similar State agencies to conduct studies or develop innovative approaches related to the marketing of agricultural products. FSMIP funds can be requested for a wide range of research and service work aimed at facilitating the marketing, distribution, and utilization of agricultural products. While all proposals which fall within FSMIP guidelines will be considered, States were encouraged in the 1999 solicitation to submit proposals to develop direct marketing strategies and initiatives that benefit small farms, to partner with community-based organiza-

tions interested in pursuing local or regional food system strategies, and to address marketing issues of particular importance to limited-resource farms. Information on FSMIP projects can be found at www.ams.usda.gov/tm/fsmip.

Thank you for allowing me to share our direct marketing activities with you. We are very excited about building on the work we have done and look forward to working with you to create new opportunities for direct marketers.

Getting Started in Value-Added Products

Jennifer Gleason

Proprietor of Sunflower Sundries
Mount Olivet, Kentucky

This is a how-to workshop addressing the steps necessary to develop a value-added enterprise on the farm. After consideration of issues discussed, the participant will 1) analyze their operation for potential value added products, and 2) understand the process required to develop those products.

Value-added means making something more valuable. This is done by applying a craft or specialized knowledge to an existing element. It is not a new idea: wine is always worth more than grapes. By adding value on the farm, more money is made for the farmer and kept in the community.

For farmers to move into value added products, several steps must be taken:

1) Choose a Product or Service

- Do what you love and start with what you have.
- Make it the highest quality in your market.

2) Research Your Market

- § Study your competition, research history, do market research yourself if possible.
- § Buy competitors' products and try them for comparison.
- § Visit others doing something similar for networking and information.

3) Write a Business Plan

- § Value-added is a new business added to the existing enterprise.
- § How will new ventures integrate into present circumstances, including seasonal nature, availability of labor

and raw materials?

§ A basic plan will help you navigate through the process.

4) Market Your Product

§ Define your market and research sales and distribution channels (wholesale, retail, co-op, mail order etc.).

§ How will your product/service be delivered (UPS, common carrier, etc.)?

5) Design Production and Packaging

§ Production design, manufacturing process, costs, selling price, labor needs must be planned.

§ Design of finished product, packaging, and sales literature (graphic artist?).

§ Good record keeping is essential to perfecting craft and use for analysis of success.

6) Ideas to Consider

§ Ideas should be tried in a small way first to minimize risk.

§ Use local labor over machines where desired/possible/practical.

§ View your product/service with an eye towards beauty and art to make the quality include all aspects of a desirable end.

§ Use as many local raw materials as available, keeping your money in your local economy.

§ Be diversified - have at least three areas of income. Sell to many, not to a few.

Community Food Circles: Directly Linking Farmers and Consumers

Mary Hendrickson

Food Circles Networking Project
University of Missouri Outreach and Extension
Columbia, Missouri

The U.S. food system is both globalized and industrialized. However, the globalized, industrialized food system has not worked for many small farmers because it generally requires intensive capital outlays and high mechanization. Many consumers are also raising concerns about the food system. The Food Circles Networking Project links those farmers, consumers, and small business people who don't want to participate in the global system in localized, personalized food systems.

Such food systems have several advantages for small farmers. Personal relationships are created around producing and consuming food and are embedded in community interaction. These relationships take a long time to develop but are harder for the mass market to dupli-

cate. By involving consumers directly in the food system, small farmers can avoid many of the capital-intensive production and marketing practices of the dominant food system.

Small farmers need to recognize the differing concerns that consumers have about the food system - those rooted in concern for the environment, social equity, food safety, humane treatment of animals, rural communities, or an ethical food system - and produce food that can satisfy those concerns. One way of connecting farmers with consumers is by forming food circles, groups of concerned citizens who link farmers and consumers together.

The Community Supported Agriculture (CSA) Model Opportunities and Challenges

David R. Lynch

Sunrise Farm and CSA Garden
Loveland, CO

Community Supported Agriculture (CSA) is alternative market arrangement in which small farmers can remain economically viable distributing fresh produce to area residents. In concept, it is a stable food economy creating a partnership between urban members and local growers, sharing the risks and rewards of farming. Central to this is a belief in the integrity of natural systems and in the reintegration of agriculture into community life.

The CSA model offers farmers a unique opportunity yet presents a number of challenges. Farmers see CSA as a way to make a living that nourish them and provides children and adults alike with the opportunity to experience the cycles of nature and learn what it takes to produce wholesome healthy food. Through farm memberships a sense of community and social responsibility for our environment is generated. Yet CSA programs are fraught with everyday challenges. In order to generate sufficient income, a CSA farmer spends enormous amounts of energy courting and retaining farm memberships. Many CSA farmers find that they must rely on off-farm income, a variety of marketing strategies, and frugal lifestyle to make CSA work. For example few CSAs have health insurance. Most are reluctant to stake their whole operation on a CSA, depending on it only for start-up capital in the spring. Generally CSAs experience a shortage of money to hire labor, buy equipment, and time to get things done is never enough.

How can community support for CSA be nurtured? Can we enjoy such things as ecological health, food security, and a sense of rootedness without breaking the backs and hearts of entrepreneurial small farmers?

There are three main areas within extensionist; agricultural professionals and community activist can help:

- * Acquaint the public with the CSA model and it's underlying rationale
- * There is a need for CSAs to interact with and gather support from other local and regional institutions bringing the CSA concept into the classroom and school age children the field.
- * There is a need for CSAs to develop networks among farms and farmers within a region.

Individual CSAs can benefit from a regional or statewide association that provides technical and organizational assistance.

The CSA model provides benefits that extend well beyond dollars earned and produce received it adds to the organic matrix that contributes to community food security and to a sustainable way of life now and into the future.

Community Shared Agriculture and Food Circles Small Farm Involvement in the CSREES, USDA Community Food Projects Competitive Grants Program: *Opportunities through 2002*

Elizabeth Tuckermanthy, Ph.D. R.D.
USDA-CSREES

In my talk today I wanted to inform you about two activities around community food security at USDA. The first is a grant program, which can bring funding to small farms, and the second is an initiative established by Secretary Glickman to focus the energy and resources of USDA on community food security. I want to be clear that these programs are connected, but at the same time different programs.

The Community Food Projects Competitive Grants Program (CFPCGP) was a part of the 1996 Farm Bill. The funding came from Food Stamps. The funding is, therefore, mandatory money available each year, without appropriations through the year 2002 when the farm bill will be revised. The CFPCGP was delegated to CSREES to run the competitive grants process. Each year 2.4 million dollars is made available through the CFPCGP to grassroots non-profit organizations in low-income communities to:

1. Increase food access;
2. Increase self-sufficiency over food systems;
3. Address food, nutrition, and farm issues;
4. Involve entire food system assessment and long-term planning;
5. Develop linkages and collaborations throughout community;
6. Become self-sufficient over 1 - 3 years of the project.

Partnerships are encouraged between public and private sectors, profit and non-profit, universities and non-governmental agencies and farms. Since 1996 sixty-nine projects have been funded. Abstracts of these projects along with contact numbers can be found on our web site: www.reeusda.gov/crgam/cfp/community.htm

Now that you know the basic principles of the legislation, which established the grant program, I would like to talk with you about some examples of small farm involvement in grants that have been funded. There are examples among our awardees of small farms that have

collaborated with consumers to create direct marketing opportunities through CSA marketing and Farmer's Markets. Some projects have actually established small farms and work from them to establish viable food systems within low-income communities.

**FIELD TO FAMILY, PRACTICAL FARMERS OF IOWA,
BOONE, IOWA - \$135,600 FOR 3 YEARS
CONTACT: GARY HUBER (515) 232-7162**

This project works with multiple farms to contract for particular crops. It is a different way of doing community supported agriculture, several farms providing produce to a central location. The shares provided for the CSA are paid for by members and many shares are subsidized for low-income members by donations from churches that belong to the project. The goals for this project are to make fresh, locally-grown produce more readily available to low-income households through linkages with churches and agencies helping families leave welfare; promoting proper nutrition and helping producers access local markets. They have been able to work their CSA to accept food stamps and they have standards that support farmers' livelihoods. If food is given away, the farmer is paid for it first.

**FOOD SECURITY AMONG FARM-WORKER COMMUNITIES
IN THE SALINAS VALLEY, ASSOCIATION FOR
COMMUNITY-BASED EDUCATION, WASHINGTON, D.C.
AND ITS RURAL DEVELOPMENT CENTER, (RDC) IN
SALINAS, CA - \$105,000 FOR 2 YEARS
CONTACT: JOSE MONTENEGRO (414) 869-1600**

This project works to educate and give farming opportunities to farm workers so that they can learn organic farming techniques to produce, distribute and market their own products. The project also promotes education and policy changes to help farm workers become more self-sufficient over their food.

Missoula Food System-Community Agriculture Project

Missoula Nutrition Resources, Missoula, Montana
\$175,000 for 2 years
Contact: (406) 423-3663

This project is a community-wide effort including diverse sectors of the community. It reported the following outcome of their project:

1. Promote comprehensive responses to local food farm and nutrition issues.

A Program in Ecological Agriculture and Society (PEAS) was implemented for 50 University of Montana students, with 25 of them working as interns at farm sites. Other workshops were held on gardening, food preservation, cooking, and nutrition.

2. Increase the self-reliance of the community in providing for its food needs.

Six acres of undeveloped land were put into production for gardens and Community Supported Agriculture (CSA) projects. CSA shares were purchased by 15 households and donated to another 30 WIC families.

A 20x70 foot greenhouse for starter plants was constructed at one of the farm sites. Neighborhood gardens aided 120 households in supplying their own food.

Over 700 volunteers from more than a dozen organizations contributed more than 6,000 hours to the project. Some 175 persons attended a single lecture on sustainable growing and other workshops were also held.

3. Meet the food needs of low-income people by growing, gleaning, preserving, and distributing locally-grown produce.

In excess of 57,000 pounds of local produce was provided to low-income families and emergency feeding organizations in the first season of the project. A similar, though unweighed, amount of produce was provided to low-income volunteers who helped themselves to whatever they could use. Produce was also sold to CSA shareholders and institutions. A cannery owned by a religious organization and staffed by volunteers preserved over 5,000 pounds of food.

**TAHOMA FOOD SYSTEM, THE TAHOMA FOOD SYSTEM,
TACOMA, WASHINGTON -\$105,000 FOR 3 YEARS
CONTACT: CARRIE LITTLE (253) 531-5658**

This project involves South East Asian families, already experienced farmers.. They were provided land and organic agriculture training to develop niche markets. Another aspect to the project is the 4.5 acre Guadalupe Gardens. The garden and an adjacent orchard have been restored for use by a 48-family CSA. This garden is in the process of transition to management by the Guadalupe House homeless center. In addition, a bee colony was installed.

**THE URBAN FARM COMMUNITY FOOD PROJECT,
DENVER URBAN GARDENS, DENVER, CO - \$163,000
FOR 2 YEARS**

CONTACT: DAVID RISEK (303) 292-9900

Project Summary: The Urban Farm at Delaney aims to initiate a community supported agriculture (CSA) program, establish a Community Food Council, develop a livestock center, start an entrepreneurial program for youth and the homeless, and expand gardening throughout the Denver metropolitan area.

USDA policy themes and initiatives that have the potential to strengthen the impact and success of some community food projects. These include food recovery and gleaning efforts; connecting the low-income urban consumer with the rural food producer; aiding citizens in leaving public assistance and achieving self-sufficiency; and utilizing micro enterprise and/or development projects related to community food needs. Relevant ongoing USDA and other Federal initiatives include farmers' markets; USDA's Office of Sustainable Development and Small Farms; USDA and U.S. Department of Housing and Urban Development designated Empowerment Zones, Enterprise Communities; and the Ameri-Corps National Service Program (a potential source of staff support for Community Food Projects).

Applicants should also recognize the role played by food and nutrition assistance programs administered by USDA and may want to discuss in their proposals the utilization of these programs by the community and the connection to the proposed Community Food Project. These programs include: the Food Stamp Program; child nutrition programs such as the School Lunch, School Breakfast, Women, Infants, and Children (WIC) Supplemental Nutrition, Child and Adult Care Food, and Summer Food Service Programs; and commodity distribution programs.

Applicants also should be cognizant of resources available from other Federal programs with similar or related goals, such as the Community Food and Nutrition Program (CFNP) and Job Opportunities for Low-Income Individuals (JOLI) program administered by the Office of Community Services within the U.S. Department of Health and Human Services.

USDA policy themes and initiatives that have the potential to strengthen the impact and success of some community food projects. These include food recovery and gleaning efforts; connecting the low-income urban consumer with the rural food producer; aiding citizens in leaving public assistance and achieving self-sufficiency; and utilizing micro enterprise and/or development projects related to community food needs. Relevant ongoing

USDA and other Federal initiatives include farmers' markets; USDA's Office of Sustainable Development and Small Farms; USDA and U.S. Department of Housing and Urban Development designated Empowerment Zones, Enterprise Communities; and the Ameri-Corps National Service Program (a potential source of staff support for Community Food Projects).

Applicants should also recognize the role played by food and nutrition assistance programs administered by USDA and may want to discuss in their proposals the utilization of these programs by the community and the connection to the proposed Community Food Project. These programs include: the Food Stamp Program; child nutrition programs such as the School Lunch, School Breakfast, Women, Infants, and Children (WIC) Supplemental Nutrition, Child and Adult Care Food, and Summer Food Service Programs; and commodity distribution programs.

Applicants also should be cognizant of resources available from other Federal programs with similar or related goals, such as the Community Food and Nutrition Program (CFNP) and Job Opportunities for Low-Income Individuals (JOLI) program administered by the Office of Community Services within the U.S. Department of Health and Human Services.

Farmer-Direct Marketing on the Internet: An Emerging Institution?

J-C. V. Klotz

USDA-Agricultural Marketing Service
Washington, DC

The objective of this paper is to present basic information on Internet consumers and trends and to discuss how producers can successfully direct market farm products on-line.

Of the approximately 92 million Internet users, it is estimated that one-third make purchases on-line. Many farm-direct marketers look at this data and wonder how they can effectively market their products on the Internet. Certainly of these 28 million customers on the Internet there must be a customer who wants to buy their products! As Internet use in rural areas and among farmers grows, it becomes an increasingly viable marketing option.

In general, most surveys of farmers markets and other farmer-direct marketing outlets find the customers to be above average in age, education, and income. The same is also true for Internet users. For example, 41% of Internet users are college or post-graduates and 42% of Internet users make more than \$50,000 a year.¹ Thus, many Internet users are potential farm-direct marketing customers.

There are several different ways to direct-market on the Web. A producer or farm can have an individual Web site or have a listing in an Internet directory.

Individual farm Web site: Used to transact sales, distribute information, or a combination thereof. For example, a maple syrup producer may use a Web site to offer on-line ordering, and a pick-your-own operation may use the site to distribute information to customers such as product availability, hours, and directions.

Directory listings on the Internet: There are commercial Internet directories that will post farmers' information for a fee (i.e., <http://www.smallfarm.com>). There are also directories with state departments of agriculture (i.e., <http://www.massgrown.org>) and Web sites by grower associations and non-profit organizations.

No one solution is right for every producer, and each one should make sure that his or her solution is a good fit, not only for the project's objectives but also considering resource constraints such as time and capital.

Like any marketing decision, a producer should start by asking:

- What are the characteristics of my customers?
Consider age, ethnicity, gender, income, and where they live.
- What do I know about my customers' interests, values, and behavior patterns?
- What are the attitudes and perceptions of my customers? What do they want or expect from my product or service?
- Is there anything else important I know about my customers?

Further, in investigating the "typical" Internet customer:

- How closely do they compare to the answers to the questions listed above?
- Are most of my customers already on the Internet?
- Is this an opportunity to attract a new type of customer?
- What is known about current customers' Internet habits? Are they on the Internet? Do they use e-mail? What would be the benefits for my customers if I had a Web site?

Much basic market information on Internet consumers is on-line and available for free. Sites such as <http://cyber-atlas.internet.com> and <http://www.nua.ie/surveys> even offer searchable libraries of articles. There is also a list of resources available at:

http://dir.yahoo.com/Computers_and_Internet/Internet/Business_and_Economics/.

Internet consumers mostly buy known items such as books and CDs. However, greater numbers of consumers are purchasing "home and garden" and "food and wine" products. Farm-direct marketers should view this

as an emerging opportunity.

Internet consumers find things like pricing, potential return hassles, credit card concerns, privacy issues, and navigation difficulty to be the greatest barriers to Internet buying. Farm-direct marketing Web sites should do everything possible to assure customers that they are "honest" and are not going to, for example, abuse their credit card number or sell their e-mail address.

Marketers should take advantage of the consumers' positive opinion of Internet shopping in regard to convenience. Consumers also like Web sites that have high-quality content and are easy to use, quick to download, and updated frequently. Make sure to register any site on a search engine, as that is the most common way that consumers find Web sites.

How to get started?

1. Clearly define an objective.

What is the purpose of the Web site? Develop a 3- to 5-year "Internet Marketing" plan for it. Define measurable goals for the project such as X dollars in sales or X number of subscribers for an e-mail marketing list.

2. Research, research, research!

- Are your current customers on the Internet? What is known about their habits?
- Is there a new type of customer to be attracted?
- Who are the competitors?
- Network - talk to other farm-direct marketers on the Internet.
- Are there any local or state programs that can help with Web site design and training?
- Investigate Internet service providers' services and costs.
- Is there a friend, family member, or customer who would barter product in exchange for Web site development?
- Consider getting domain name registration (<http://www.YourFarmName.com> is the easiest thing for any customer to remember!).
- Draft a design - ask customers, family, and friends for suggestions and opinions.
- Ask customers for ideas and feedback!

3. Other ideas - how to get "foot traffic" to the Web site and keep them coming:

- Should other things be done to promote your Web site? "Freebies" or samples with an order or a monthly drawing for Web site visitors?
- Would your customers benefit from special "on-line" coupons that can be printed and brought into the retail store?

- How will one "follow up" on orders to personalize the transaction? (Remember this is one of the key characteristics of farm-direct marketing!)
- Will the Web site have advertisements for others? Links? Could you and a neighboring producer link your Web sites together? Or form an "Internet marketing cooperative" of small producers?
- Find and request links from chambers of commerce, associations, state departments of agriculture, directories, newspapers, tourism sites, and so forth. If links aren't available - ask.
- What features would be good for the Web site? For example, an e-mail customer list, "What's new" section, ordering, directions to operation, hours of operation, "on-line coupons," guest book. Use counters to see what traffic is like on different areas of the site to determine where greater effort should be made.
- Call the local newspaper or send a press release - get a "human interest" story.
- Put the Web site address everywhere - advertisements, signs, banners, stationery.
- Don't let the Web site become out of date - keep it fresh!

Remember: develop a budget and stick to it! Just as any advertising or marketing tool you use - don't waste time or resources.

Lastly, as with any marketing effort, evaluate success. If the Web site doesn't yield desired results in a few months, revisit the marketing plan and further investigate options. Were the expectations too high? Or were the methods not right? (For example, it may be necessary to have a "monthly drawing" to get customers to subscribe to an e-mail list.) Make sure to revise your "Internet marketing plan" as needed.

Like any direct marketing opportunity, Internet marketing has great potential. However, it is necessary for producers to tailor their Web sites to reflect their needs and goals in order for them to be beneficial to the operation.

<http://cyberatlas.internet.com>, citing data from the Graphic, Visualization & Usability (GVU) Center at Georgia Institute of Technology (http://www.gvu.gatech.edu/user_surveys/) of June 1999.

(Information in presentation based on "How to Direct Market Farm Products on the Internet," forthcoming by Wholesale and Alternative Markets, Agricultural Marketing Service, USDA.)

Give Agriculture a Human Face: Strategies to Create Win-Win Direct Marketing Mechanisms for Farmers and Consumers

Richard McCarthy

ECONomics Institute, Loyola University
New Orleans, Louisiana

The growing interest among urban consumers to reconnect to regional food sources provides farmers with an exciting opportunity to tap into this new consumer demand. Growers gain access to profitable new markets that value freshness and diversity of product - the very strengths that family-based agricultural enterprises offer.

In addition to access to the freshest products, consumers gain a sense of community and safe, family-friendly experiences. In short, together they create a new community of interests. When farmers join a market as vendors, they gain access to many layered opportunities that may transform their businesses into more competitive, consumer-driven enterprises. In the setting of the market, good marketing ideas are contagious (as vendors operate in close proximity to one another), innovation is rewarded by consumers searching for new and different products, and new customers beget new customers (a vendor notoriety for high-quality produce at the market can quickly spread among chefs, buying clubs, and specialty stores).

At the ECONomics Institute's Crescent City Farmers Market, organizers have used their market as:

§ a context for delivering business technical assistance that is otherwise unavailable (e.g., customer service, packaging, spreadsheets) to small producers;

§ a means of introducing farmers to urban restaurants and specialty stores (e.g., quarterly meetings between chefs and farmers, weekly commodity listings, and brokering information for both parties); and

§ as a means of incubating new businesses (e.g., vendors field-test new products at the market).

To create and sustain such a community of interests, a certain degree of community buy-in and organizational capacity (for management and governance, public relations, and marketing) is a prerequisite.

Steps to Organizing a Cooperative

Mike Doherty

USDA-Rural Business and Cooperative Development Specialist
Washington, DC

EXAMPLES OF NEW MARKETING COOPERATIVES BEING FORMED

- Illinois Organics - storage and marketing of organic soybeans and specialty grains
- Southern Illinois Vegetable Growers Coop - minority farmer marketing of vegetables to retail and wholesale
- Illinois Aquaculture Cooperative - marketing pond-raised catfish

EXAMPLES OF RECENTLY FORMED MARKETING COOPERATIVES

- Green Meadows Hay Cooperative (Iowa) - forage marketing
- Heartland Organic Marketing Co-op (Iowa) - contracting, scouting, and marketing of organic tofu soybeans to Japan
- Minnesota Winegrowers Association

SUMMARY OF ORGANIZING A COOPERATIVE

- A cooperative is a BUSINESS that serves the needs of producers, to their MUTUAL BENEFIT. Regardless of the cooperative's purpose or membership, starting a cooperative requires a great deal of time, energy, commitment, and technical resources.

STEPS TO ORGANIZING A COOPERATIVE

- Commit yourself to doing research (newspapers, magazines).
- Call USDA-RD, CES specialists in other states, state departments of agriculture, UW-CC, etc.
- Hold an exploratory meeting with producers. Present the concept. If interest is shown, form a steering committee.
- Complete a survey of area residents or producers to evaluate actual level of need, level of understanding, and willingness to invest.
- Develop a business plan and present it to potential members in a professional and organized manner, at a closed meeting.
- Sell shares of stock or membership to interested investors; deposit in escrow.

- Draw up legal documents via a committee:
 - Articles of incorporation and bylaws
 - Membership applications
 - Marketing agreements
 - Equity certificates
 - Elect an incorporating board that has leading producers on it - AND represents ALL the members.
 - Hire the pre-selected manager to carry out duties of start-up of the cooperative.
 - Look for someone who enjoys promotion.
 - Build, lease, or rent equipment and facilities.

HELPFUL HINTS

- Use committees.
- Allow sufficient time between meetings.
- Set meaningful agendas (all meetings should be held for a specific purpose).
- Schedule and demand committee output.
- Be realistic about capitalization.

Exporting for Small-Scale Cooperatives

(The Proven Approach)

Samuel W. Scott

Small Farm Development Center, Alcorn State University
Lorman, Mississippi

The international marketplace is now a single market due to global market liberalization and an increase in technology and communication. No longer is international marketing considered the domain of multinational corporations (MNC's). Well-organized small-scale cooperatives (SSC's) with good leadership and management can participate in this market.

Several success stories are available. However, the export business model that is to be developed and adopted to ensure success must address the following. There must be:

- a well-organized group of producers, and
- a complete understanding of:
 - how to develop a sound marketing strategy,
 - how to position your product(s) or service(s) and how to define and target your marketing segments and customers, and

- how to implement the mechanics of international marketing (from export documentation, product pricing, promotion, delivery, and collection of payments).

Financing Young, Beginning, and Small Farmers: The Farm Credit System

John J. Hays

Farm Credit Council
Washington, DC

I am the Vice President for Policy Analysis & Development at the Farm Credit Council, based in Washington, D.C. The Farm Credit Council is the national trade organization representing the Farm Credit System's interests before Congress and others. Congress chartered the Farm Credit System (FCS) in 1916 to finance agriculture. It is a system of farmer-owned cooperatives operating all over the United States. I will provide some general background information about the FCS and then speak specifically to its statutory mission to finance young, beginning, and small farmers and ranchers.

The FCS has just under \$70 billion in loans outstanding in the 194 borrower-owned lending cooperatives that are part of the system. It raises money in the national money markets to fund loans to farmers, ranchers, fishermen, marketing and processing operators, farm-related service businesses, rural homeowners, farmer cooperatives, and rural utilities. Each borrower is a member/owner of its FCS lender.

Of the various lenders that make agricultural loans, only the FCS and the Farm Service Agency exist primarily to finance agriculture. Currently, commercial banks have a 40 percent market share, FCS has a 26 percent market share, life insurance companies have a 6 percent market share, and the Farm Service Agency has a 4 percent market share. Additionally, 24 percent of the agricultural loans are made by individuals and others. The total amount of all agricultural debt is currently about \$170 billion, with agricultural assets totaling about one trillion dollars. As an industry, agriculture is not that leveraged - .17 debt to asset ratio.

The FCS has \$68.6 billion in loans outstanding to 400,000 borrowers. As of July 1 of this year, these loans were made by 187 borrower-owned lending associations, six Farm Credit Banks, and one Agricultural Credit Bank. The lending associations have different lending authorities. The 32 Federal land bank associations make loans on behalf of a Farm Credit Bank. The 40 Federal land credit associations make long-term agricultural mortgage loans on its own behalf. The 63 production

credit associations make only operating and intermediate-term loans such as for the purchase of equipment. The 52 agricultural credit associations can make loans with short-, intermediate-, and long-term maturities. The six Farm Credit Banks obtain the funds from the national money markets and make loans to the associations that in turn make the loans to the farmers, ranchers, and other eligible borrowers. Finally, the agricultural credit bank provides funds to certain associations and also makes loans to farmer cooperatives and rural utilities, and finances export transactions.

As for the proportion of the different types of loans made by the FCS, 49 percent of the total loan volume is for agricultural mortgages. Operating and term loans represent 26 percent of the portfolio, and loans to cooperatives represent 22 percent of the loan volume. International transactions were about three percent of total business as of last year-end.

This has been a general overview of the FCS as a whole. Now I will speak about the FCS's mission to finance young, beginning, and small farmers and ranchers.

Each FCS lender that makes loans to farmers and ranchers is required to have a program specifically targeted to young, beginning, and small borrowers. This requirement is spelled out in the Farm Credit Act and also in Farm Credit Administration regulations. The Farm Credit Administration is the FCS's federal regulator, similar to the Federal Deposit Insurance Corporation, which regulates banks.

Each FCS lender designs its program to address the needs of its market. The programs involve different levels of coordination with other parties and generally focus on two areas: (1) credit and credit enhancement and (2) education and technical assistance.

As for lending results by December 31, 1998:

- 15.2 percent of loans benefited young farmers and ranchers (age 35 and younger)
- 18.2 percent of loans benefited beginning farmers and ranchers (10 years or less experience)

- 55.6 percent of loans benefited small farmers and ranchers

These figures are conservative. The definitions of a young, beginning, and small farmer and rancher were revised by the Farm Credit Administration in December 1998. The revisions were made in order to reflect more appropriately how the FCS serves this target market. FCS institutions were granted until January 1, 2001, to modify their computer systems to accurately identify a loan made to a young, beginning, or small farmer. For year-end 1998 reporting, lenders in a couple of the Farm Credit districts were unable to use the new definitions and instead reported using the old definitions that were more restrictive.

Next I want to share with you the different parties and types of coordination that FCS lenders use in their young, beginning, and small farmer and rancher programs. Most all (88 percent) of the FCS lenders coordinate with the Farm Service Agency. At year-end 1998, FCS lenders reported \$1.1 billion in loans with guaran-

tees. Just under half of the FCS lenders are involved in state programs. FCS lenders also coordinate training programs with third parties or offer training on their own. Other coordination parties include input dealers/merchants, other FCS institutions (banks and associations), farm groups, the Small Business Administration, and commercial/community banks.

This has been an overview of the FCS and programs that target young, beginning, and small farmers and ranchers. What's in store for the future? You will see the enhancement of existing programs and also more involvement by the Farm Credit System Foundation. The Foundation is a non-profit arm of the FCS that has funded research on issues important to the FCS. Now the Foundation will have a new focus on issues faced by young, beginning, and small farmers and ranchers. Research will continue to occur but it is anticipated that the Foundation will be more involved in outreach and educational activities beginning in 2000.

Encouraging Interagency Cooperation to Assist Small Farmers

John A. Winder

The Samuel Roberts Noble Foundation,
Ardmore, Oklahoma

INTRODUCTION

Quality multidisciplinary and multiagency programs support the overall outreach effort, Particularly since few agencies employ experts in all areas. Because of recent cutbacks in public funding, only collaborative projects can produce quality products for clientele.

Cooperation also broadens programs and helps avoid “tunnel vision.” Additional points of view are always beneficial. Interagency interaction occurs spontaneously when two or more people with compatible talents and personalities recognize a common goal, but stimulating collaborative events is difficult. This article examines three components crucial to encouraging successful interagency cooperation.

NETWORKING

Networking is the logical prerequisite to collaboration. Linkages can be established easily if someone takes the initiative, and national and regional disciplinary meetings are fertile grounds for development of cooperative projects. However, the rationale for doing a collaborative project is often to collect input from another discipline.

Multidisciplinary interaction is more difficult to establish, and requires a concerted effort that can be facilitated by seminars and brain trusts. The Noble Foundation often serves as facilitator for these forums. Because of the multidisciplinary makeup of the Foundation, it is relatively easy to attract individuals with diverse backgrounds and abilities. Some of these sessions have been one-time affairs, while others have spawned regional organizations. In both cases, increased interagency cooperation resulted.

PROJECT SELECTION

As with undertakings, a good collaborative project

is both logical and meaningful.

Individuals frequently undertake projects because they are enjoyable or familiar, but there must be a more compelling reason for the effort. Careful assessment of a problem is difficult. Biases must be eliminated and decisions must be based on fact.

To design and implement a quality project, planners must consider four components.

First, we must understand the problem that is to be addressed. Projects should alleviate critical limitations in the target industry, particularly small-farm programs. Farmers with small land holdings have different limitations than those with larger operations. Planners must consider root causes of limitations. Are they educational, economic, time-related, or social? What are the critical weaknesses?

Traditional educational efforts focus largely on training producers to be managers, but on small farms some typical management activities are inherently difficult, if not impossible. Applying commercial techniques can be costly and ineffectual. By recognizing the source of the problem and not just the symptom, planners can create an effective program.

Understanding your audience constitutes the second step, which is extremely difficult, and seldom done. Most outreach professionals are poorly trained in sociology and psychology, yet to design functional programs, understanding the personalities of the target audience is extremely important because different personality types respond to various approaches. If the effort is largely educational, one must consider which teaching approach is appropriate. If the project requires active participation by farmers, we need to understand how they will respond to the program.

The term “thinking outside the box” is overused, but the concept is important and is the third step in developing a functional program. If we avoid the trappings and traditions of our profession, we often

see opportunities that were not apparent. It takes courage to ignore our standard paradigms, as it takes courage to design comprehensive projects, both of which are imperative during program development. Granted, the untried is riskier than the proven, but the latter is often only marginally effective. We must learn to consider new approaches, even if they change our roles from educators to facilitators. Once again, consider what needs to be done to make the target industry successful (profitable). Can education solve the problems, or do we need to consider a service, development of a cooperative, or perhaps an alternative effort?

The final component of a marginal program is the ability to assess and change as needed. Often we fail to recognize problems in the program; thus periodic evaluation is critical to success. Though it is very difficult to establish an environment in which selfappraisal is readily accepted, such a course may be the difference between the outstanding and the mediocre.

ADMINISTRATIVE SUPPORT

Effective collaboration cannot be mandated. Often administrators recognize the need for cooperative projects and attempt to force staff to interact against their will. Instead, leaders should encourage staff to attend both regional and national meetings and to host meetings, field days and educational events whenever possible. Staff must learn to invite speakers from various agencies for these events. Though interaction often occurs spontaneously, some staff members are more timid and reluctant to pursue opportunities. The best remedy is to identify potentially collaborative situations and then encourage the timid person to participate. Remember, not everyone is creative, nor is everyone a leader. Some prefer to support someone else's ideas, which must be seen as productive interaction and duly rewarded.

Finally, evaluation and tenure procedures often place a premium on individual versus group accomplishments. Penalties for collaboration must be eliminated. Staff must clearly understand that participation in cooperative projects will be rewarded.

SUMMARY

Interagency cooperation begins with networking and individuals must know what talent is available to support a program. Networking can be encouraged through attendance at technical meetings, tours, field days, and designed brain trusts. Development of important programs is at the core of collaboration. Projects must be well conceived, truly beneficial, carefully designed, and meticulously evaluated. This process should include assessment of the benefit to the target industry and evaluation of the target audience. Critical evaluation and periodic adjustment are important. Projects need to be changeable when warranted. Last, administrative leaders must recognize the importance of interaction by eliminating barriers and rewarding efforts.

Building a Bridge to Economic Independence: Establishing a 1994 Land-Grant Extension Project

Marie Campos

Institute of American Indian Arts
Native American Pastoral Textile Project
Santa Fe, New Mexico

The intent of the Native American Pastoral Textile Project (NAPT) is to capitalize on the capacity of the traditional Native American Indian textile industry and establish a 1994 land-grant extension program while maintaining the cultural integrity of the target group. The NAPT is based at the Institute of American Indian Arts, and its target groups are rural reservation communities located in the Southwestern United States. The tribal groups live in extremely geographically isolated rural areas and have few viable economic opportunities. Taking advantage of their resources, skills, and interests makes the most sense.

Maintaining traditional culture in a modern ever-changing world is a major concern in native communities. How can the traditional culture be passed on and preserved in the youth? Community assessments, conducted through surveys and interviews, have revealed that the best way to preserve the culture is to make it economically viable. Economic growth is accomplished through the participants' application of advanced techniques taught on the subjects of textile and wool industry practices on the reservation.

Founding educational outreach on advancing native practices - used in producing products from local small farm flocks and available natural resources - makes practical the federal and state government goals of assisting rural citizens in maintaining their small farms and achieving greater economic self-sufficiency. Their lifestyle is preserved, and the project illustrates, through the traditional native weaving industry, that small farm agricultural economic development, family well-being and Native American culture can be positively impacted. Through project activities the participants attain practical life skills that combine their artistry and their rural lifestyle, add value to their readily available resources, and create a bridge to economic independence.

The Native American Pastoral Textile Project applies the following strategies:

Strategy 1. Informal introduction of the textile trade as an economic solution to local economic needs, the col-

lection of interest survey data, interviews, site visits, and meeting in tribal communities

As members were recruited they were asked to file a volunteer membership form. Attached to the form was an interest survey containing 33 project workshops including weaving, shearing, flock management, plant dyes, etc. The constituents were asked to mark an (X) in areas they were interested in learning and mark a (Y) in areas they could help develop. The volunteer member form and survey purpose is three-fold: 1) to determine who is interested in participating, 2) to determine what they are interested in learning, and 3) to determine how they can contribute.

Results: Permission for project activities is approved by the tribal government. Interviews from more than 450 tribal members in various locations were obtained. A total of 205 people registered a volunteer membership form in the first 11 months of operation. Forty-six percent of registered volunteer members did not fill out the survey, largely due to the high illiteracy rate among the target group. Many participants' communication skills are limited to the spoken Navajo language.

Of the remaining 54%, the majority of participants were interested in learning traditional tribal weaving techniques, natural dyes, shearing for market value, management of farm flocks, and educating their youth about preserving traditions. They want practical and applicable education that they can use in their daily lives. The most active core participants attending workshops did not fill out membership forms or surveys, and they only speak Navajo.

Challenge: With \$5,000 per month, the budget only supports one full-time employee, travel expenses, and a little more than supplemental workshop materials. How can the project reach its goals and impact multiple target groups over a four-state region with limited finances?

Strategy 2. Workshops and work-group development approached on a grassroots organizational level. Community leaders are identified who can call together the work group and keep them working toward goals

between formal workshops. Community volunteers conduct workshops with the project instructor. Workshops are targeted to the elderly population in senior centers. Intergenerational training is used to provide a vehicle for youth to participate with elders in maintaining their cultural heritage and starting a new business. Workshops are geared to fostering independent work-group development.

Results: Elders are given the opportunity to fulfill their social responsibilities: to pass on tradition, to invest time in teaching their knowledge to the youth, and to convey the economic and cultural benefits of enhancing and continuing their pastoral lifestyle. This stabilizes family values while enjoining them in an entrepreneurial enterprise.

Work groups were formed in Thoreau Navajo Chapter, Canoncito Navajo Band, Whitehorse Lake Navajo Chapter, Jicarilla Apache, Central Navajo-Tsaile Arizona, and Mescalero Apache. Thoreau and Canoncito have begun product design and some participants have begun selling their work. Fifty-eight participants were trained in traditional weaving and continue to train other work group members.

Challenge: Loss of project funding, provision of services to stakeholders

Strategy 3: Partnerships sought

Though cooperative partnerships, the NAPT project assists and is assisted in presenting conferences and workshops that raise public awareness and address issues concerning the environment, land management, small farming, cultural preservation, and other challenges facing rural tribal populations. Joint partners provide financial support, specialized services, and resources that make feasible the goal of providing effective extension education.

Results:

- The U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service (CSREES) provides the 1994 Land-Grant Tribal Extension Program funding. CSREES not only grants financial support, but it also acts as a liaison for networking contacts and technical information support. CSREES staff is true to their partnership and has acted as mentors and given guidance beyond the call of duty. Through their mentoring assistance, IAIA, who lost the funding in Fiscal Year 1998, has managed to establish a fundable project for 1999.

- New Mexico State University, Northern District Extension Service's 1862 land-grant institution, provides local partnership contacts and technical assistance in project design, development, and planning. NMSU also provided funding during FY 1998 that enabled the project to make it through to the FY 1999 CSREES funding cycle.

- The Los Alamos National Laboratory Foundation provides funding for support of two work groups and the project base.

- Dine College, Tsaile Campus, and Crownpoint Institute of Technology, 1994 land-grant institutions, collaborate on exhibits, joint conferences, special events, and workshops. They provide field support and facilities while NAPT is working in their area.

- The Navajo Nation Veterinary Services partnered to realize the reservation-wide initiative to revitalize the wool industry.

- County and tribal extension agents, nonprofit organizations, and federal and state agencies all play a collaborative role in providing services, education, and opportunities for project participants' economic as well as intellectual growth.

- Tribal government partnerships are important; they provide facilities and organizational support of work group and workshop activities.

Strategy 4: Media and Public Relations

Project activities are announced through press releases. Financial supporters are gratefully recognized. Volunteers are always given credit for their contributions. Activities are photographed and used for press releases.

Results: Participants are given a sense of accomplishment when their photos come out in local newspapers. The Navajo Times has been very good to the project and has covered the project activities repeatedly over the last year. Gallup Independent covers the project, along with Indian Country Today and other native newspapers. This builds support on all levels.

Challenge: Of all the challenges faced in establishing an effective 1994 extension program, the most precarious is the lack of internal support for the project. The one employee who takes on such a feat is often burdened with all the responsibilities for the project's design, development, and implementation. There is lack of help available internally due to the already overextended support staff, and the lack of understanding of project scope from other coworkers. Of utmost concern is the need to

educate the administration regarding land-grant status. Lack of financial resources permeates not only the target groups and project, but it is a major issue for the institutions themselves. Most tribal colleges struggle with a year-to-year existence, not knowing if they will be able to survive.

What makes this challenge most difficult is that the foundation of the project is on fragile ground. Internally the institutional body is unable, even if willing, to absorb any more work.

The project director must fulfill all the internal institutional requirements to meet grant obligations, do all the office and field work, and also financially develop the project. The work groups begin to disintegrate when attention is focused in the office on financial development. While the work groups are in their incubation stage they feel dependent on the project director for leadership. When the project director returns to the field, the groups do regroup, but with less confidence. Under the present circumstances there is a successful bridge from isolated rural tribal communities to the economic resources in the global market, but the crossing is fragile. The Native American Pastoral Textile project desperately needs more funding for support staff and a sustained commitment from the host institution to the project.

A Brighter Outlook for Tomorrow in Indian Country

Ronald L. Reum

AG Division Director
Fort Berthold Community College
New Town, North Dakota

The Fort Berthold Indian Reservation encompasses close to a million acres and consists of the Mandan, Arikara and Hidatsa tribes. These tribes are formed into one governing body called the Three Affiliated Tribes (TAT). The presentation will begin with a brief history of the Native American people living in this area and address the problems associated with relocation from the river bottoms due to the construction of the Garrison Dam on the Missouri River. The geographical limitations and distances encountered in reaching small farmers consist of poor roads and great distances (220 miles from the SE corner to the NE corner of the Reservation).

The presentation will focus on the college programs, with the main thrust on adult education of small farmers and the outreach work on the reservation and surrounding counties. Problems and questions confronting client producers in our area entail transportation, availability of markets, marketing skills, credit for capital needs and operating, new animal husbandry and crop production techniques, and USDA program participation. The reservation encompasses parts of six different counties, which

creates problems for producers trying to utilize services from USDA. Lastly, we will look at problems associated with the commodities raised in our area and the farm crisis, which is not unique to the Fort Berthold Indian Reservation.

Building Small Farm Partnership Efforts

Samuel L. Donald

Regional Research Director
Association of Research Directors
1890 Land-Grant Universities

OPENING REMARKS

I would like to express my appreciation to Dr. Denis Ebodaghe for inviting me to attend and participate in this conference. And I also thank Lincoln University and the University of Missouri for hosting this conference and those USDA agencies and other organizations for their sponsorship. All of you represent true partners and friends to the 1890 land-grant universities, the institutions I represent as the first regional research director, and the land-grant family as a whole.

As I think of friends, it reminds me of a small community, any small community of approximately 1,000 people. In this community...there was a church where most of the people attended. In this church the preacher and the song leader were not getting along. This began to spill over into the worship service. One week the preacher preached on commitment, and how we should dedicate ourselves to service. The song leader then led the song, "I Shall Not Be Moved."

The next Sunday, the preacher preached on giving and how we should gladly give to the work of the Lord. The song leader then led the song, "Jesus Paid It All."

The next Sunday, the preacher preached on gossiping and how we should watch our tongues. The song leader then led the song, "I Love to Tell the Story."

The preacher became very disgusted over the situation, and the next Sunday he told the congregation he was considering resigning. The song leader then led the song, "Oh, Why Not Tonight."

As it came to pass, the preacher resigned and the next week informed the church that it was Jesus that led him there and it was Jesus that was taking him away. The song leader then led the song, "What a Friend We Have in Jesus." Oh yes, what a friend we do indeed have in Jesus.

BUILDING PARTNERSHIPS

Based on that friendship and whatever beliefs we have in powers beyond this Earth, and actions and reactions of

people on this Earth, we are able to develop various partnerships. Some more stable than others; some short-lived not by design but due to actions and reactions of those involved; some long-lasting and very productive; and some long-lasting but not so productive. In the land-grant community, there are examples of all kinds of partnerships, ranging from local to state to regional to national to international. How are these partnerships developed? By people getting together who have a common interest, a common goal.

Let me be more specific about how partnerships are developed in the land-grant community. All of the land-grant institutions and state-supported colleges and universities do (or can) belong to the National Association of State Universities and Land-Grant Colleges (NASULGC). In NASULGC there are councils, commissions, boards, and committees on organizations and policies (COPs), most if not all chaired by faculty, staff, and administrators, and with a significant number of members, from the land-grant community. These groups establish committees, task forces, etc. designed specifically to develop partnerships. For example, in NASULGC, as previously stated, there are the COPS: ESCOP - Experiment Station Committee on Organization and Policy; ECOP - Extension Committee on Organization and Policy; ACOP - Academic Committee on Organization and Policy; and ICOP - International Committee on Organization and Policy.

I will briefly tell you about one of the COPs, ESCOP, and how you as small farmers contribute to and influence what is done/pursued/accomplished. ESCOP has a partnership subcommittee. This subcommittee's number one goal is to establish partnerships where the bottom line results in (to name a few):

- Maximum productivity from existing resources
- Increased resources
- Greater returns on the investment of taxpayer dollars
- Better meeting the needs of society especially the farming community

Membership on this partnership subcommittee includes

representatives from all of the other COPs, other representatives from the land-grant institutions and non-land-grant colleges and universities, representatives from USDA and other federal agencies, and representatives from the private sector including CARET - Committee on Agriculture Research, Extension, and Teaching - a committee whose members include farmers, farm organization members, farm businesses and other businesses, politicians, and other appropriate groups. Through CARET and other farm organizations and businesses, small farmers' voices can be heard and will/do make a difference in policies and programs that have a direct impact on the farming community.

PARTNERSHIP OUTCOMES/OUTPUTS/IMPACTS

What then are some of the outcomes/outputs/impacts/results of some of the partnerships that have been established by land-grant institutions? Here are a few (all broadly stated):

Land-grant institutions have become national leaders in all phases of agriculture, which have led to an American agriculture that is second to none in the entire world.

Land-grant institutions have developed programs to assist the farming community in production, marketing, management, planning, etc. designed for sustainability, protection of the environment, and maximum returns on investments.

Land-grant institutions have developed various

research, extension, and education centers of excellence to make holistic services easily accessible to the farming community.

CONCLUDING REMARKS

What I have attempted to share with you today is that through partnerships, greater returns are made and society gets the benefits. And that the land-grant institutions are in various partnerships with USDA and others to design and implement policies and programs to protect our natural resources and the environment and at the same time sustain an agricultural production system that is second to none. You as farmers - small and large alike - have a voice, and you should make it heard. You can do so with your vote and participation as a member of various committees, boards, and other groups that represent farmers at all levels of government and other entities.

Creating Farming Opportunities for the Next Generation

Marion Bowlan

Executive Director, Pennsylvania Farm Link
Manheim, Pennsylvania

We have a crisis in the making. Pennsylvania agriculture has twice as many farm operators over the age of 70 as under the age of 35. Who will be our next generation of farmers?

Potential replacement farmers, under age 35, make up only 8 percent of our total number of farm operators, according to the 1997 Census. Minority farm operators accounted for only 2.5% of the total farm operators in Pennsylvania in 1997.

Pennsylvania Farm Link identified three major problems contributing to the decline in potential young farmers.

They are:

- the need for earlier farm succession planning,
- the need for start-up training assistance and hands-on experience for potential farm entrants, and
- the increasing entrepreneurial skills required to generate higher profit margins.

Pennsylvania Farm Link's programs aggressively address these needs by helping farmers develop better succession strategies and providing job training assistance to beginning farmers. Activities include workshops on farm succession planning, marketing/entrepreneurial development meetings, beginning farmer workshops, and a youth apprentice program targeted to minorities and women. A linking service helps entering farmers and landholders

locate appropriate farming opportunities, and individualized technical assistance, information, and referral are provided to any farm family.

New Hampshire Beginning Farmer Resource Guide

Bruce A. Marriott

Program Leader, Agriculture
University of New Hampshire Cooperative Extension

BACKGROUND

New Hampshire is a small state, geographically and agriculturally. The average farm is about 141 acres. About 75 percent of farms have fewer than 180 acres, and 41 percent have fewer than 50 acres. There are about 3,000 farms in New Hampshire, up about 20 percent from the last census in 1992. Eighty-five percent of New Hampshire farms have less than \$50,000 per year in agricultural sales, and 60 percent have less than \$10,000. In addition, 50 percent of all farm operators work at least 100 days per year off the farm. As you can see, New Hampshire is truly a small farm state.

On the other hand, two of New Hampshire's 10 counties rank in the top 100 U.S. counties for value of agricultural products sold directly to individuals for human consumption. The fact that most of our farms exist on the rural/urban fringe gives us a tremendous marketing opportunity, which probably accounts for the 20 percent increase in farm numbers since the 1992 census. As you might guess, most of these new "beginning" farmers are small part-time operations.

SITUATION

Many of these "beginning" farmers have not had previous farming experience, and they face a great deal of difficulty getting started in agriculture because they don't know the system. While there is a great deal of information and assistance for new farmers, it is very fragmented among many organizations and agencies, and the new farmers don't know the networks available to obtain information.

BEGINNING FARMER RESOURCE GUIDE

Recognizing the frustration that many of these new and potential farmers were facing in getting basic information, the University of New Hampshire Cooperative Extension helped to coordinate a cooperative effort with several key agencies to address the problem. It was decided that a guide could be developed to answer most of the beginner questions. This would provide consistent, uniform information for beginning farmers and save time and effort for the organizations and agencies currently providing information.

The key organizations and agencies providing input and in many cases financial assistance for this project were: the University of New Hampshire Cooperative Extension; the New Hampshire Department of Agriculture, Markets and Food; USDA-Natural Resources Conservation Service; USDA-Farm Service Agency; the North Country and Southern NH Resource Conservation and Development Area Councils; the Beginner Farmers of New Hampshire; the Farm Credit System; and the New Hampshire Farm Bureau Federation.

COOPERATIVE EFFORT

It is interesting that the theme of this conference is "Building Partnerships for the 21st Century," because building partnerships is exactly what we did to address this situation. All the agencies and organizations sat down and discussed the problem of how the need for getting uniform information to beginning farmers could be met. It was decided that a concise reference folder would be the best medium to convey information. Each agency took responsibility for one or more chapters, independently wrote them, and then brought them to joint work sessions for editing. The completed sheets were compiled into an attractive pocket folder with a color cover. They were distributed through the agencies and organizations at no cost, as there had been enough contributions from support groups to cover the initial printing cost.

All 1,000 copies of Beginning Farmer Resource Guide were distributed in the first year after its release, and the same group met to re-edit and re-print the publication in a slightly different format. The chapter titles were expanded, and they now include the following fact sheets:

1. How to Get Started! Commonly Asked Questions
2. Profile of New Hampshire - Demographics, Soil, Climate, Types of Agriculture
3. Business Development Checklist
4. Acquiring Farm Land
5. Marketing and Distribution

6. Financing Resources for Beginning Farmers in NH
7. Agricultural Laws
8. Federal Income Tax and NH Business Tax Considerations
9. Pesticide Permitting
10. Farmland and Wildlife
11. Available Resources
12. Educational Publications

There is also a publication titled "Who's Who in New Hampshire Agriculture," which is compiled each year by the New Hampshire Department of Agriculture, Markets and Food.

We are now charging \$7 (the cost of printing) for Beginning Farmer Resource Guide, which we hope will generate funds to re-edit and re-print on a regular basis. The publication is primarily of interest to New Hampshire residents, as the resources and directories pertain to that state. It is also available to others, however, from UNH Publications, 120 Forest Park, Durham, NH 03824.

IMPACT OF THIS EFFORT IN NEW HAMPSHIRE

Beginning Farmer Resource Guide has been widely distributed and used by people who are new farmers as well as those considering establishing some agricultural enterprise. The Beginner Farmers of New Hampshire organization is attempting to establish chapters in each county and is using this guide as a handbook for new farmers. This organization has also identified the need for an additional resource called "A Road Map to Compliance of Laws and Regulations," which they are developing to help beginning farmers.

This cooperative project has also opened the door to better communication with the agencies and organizations that have responsibilities for providing education, information, and assistance to agricultural producers. We're hoping that this will lead to a better understanding of each others' responsibilities and better, more streamlined programs for beginning farmers in New Hampshire.

The "New American Farmers" -- Outreach Challenges and Opportunities

Juan Martinez

National Farm Worker Coordinator, USDA

Global competition, natural disasters, and other factors have caused many of America's traditional farmers and their children - descendants from central European immigrants - to reconsider their continuing involvement in the hard business of farming. This fact of American farm life and livelihood is opening new opportunities for a whole new group of immigrants from diverse ethnic backgrounds.

In the 1990s and into the New Millennium, Laotians, Cambodians, Vietnamese, Mexicans, Central and South Americans, and traditional American farm workers, among others, are increasingly becoming the "New American Farmers." More individuals from this group are becoming farm owners as well as farm operators.

American agriculture is getting its largest infusion of new blood since European immigrants in great numbers came to America in the early 1800's and took up agrarian life. According to the most recent U.S. Agriculture Census, the percentage of America's two million farmers who are white males has fallen to 88% from 91% a decade ago. Hispanic farmers or farm operators increased 32.3% from 1992 to 1997. At the 2nd National Conference on Women in Agriculture, held in Washington, D.C., in 1998, women's valuable role in agriculture was acknowledged. The percentage of farms operated by women in 1997 (165,102 farms) increased 13.7% since 1992 (145,156 farms).

The number of younger farmers from traditional American farm families who are going into the business of farming has seen a serious decline. The number of farmers under the age of 35 has plunged to 36% since 1994, according to the U.S. Bureau of Labor Statistics. In some cases, such an influx of ethnic groups into the American farming community could easily be a recipe for racial tension, but

some ethnic groups are actually welcomed. Many Anglo growers whose children are not interested in pursuing a farming life are grateful to find eager proteges among Mexican immigrants and other farm workers. In California, produce companies worried about a grower shortage are lending money to Mexican farm workers for farm start-ups. Farm support groups are increasingly offering "Grower of the Year" and other award incentive programs to farm workers.

USDA needs to do effective outreach work to this new crop of farmers. My challenge to all USDA agencies is this: "Are you doing everything you can to reach out to and respectfully interact with these newcomers to farming communities throughout America? If not, why not?"

These ethnically diverse farmers present opportunities for USDA officials and field workers to serve these new constituents. These farmers may even have new agricultural practices from their ancient cultural heritages that can enrich America's agricultural knowledge. We all need to work together to keep this country's agriculture globally competitive. We need to respectfully include in our outreach programs and communicate with all those who labor to bring food and fiber products to domestic and international tables, no matter what their ethnic background. That is our USDA mandate - to serve all impartially and with high quality delivery of research, education, and extension programs.

Opportunities for Combining Small Scale and Sustainability in Farming

Karl North

Owner/Operator of Northland Sheep Dairy
Marathon, New York

In agriculture, small scale and sustainability are good bedfellows - arguably essential ones. My objective is to explore some of the opportunities that affinity affords, particularly in regard to the role of livestock. The rationale is the urgency of progressing toward an alternative to an agriculture that - driven by an economic system that values life only for its contribution to making money - relentlessly depletes agroecosystems of what farming ultimately needs for survival: soil, contaminant-free water, forests, climatic stability, and - above all - species.

Current fashion is for an "alternative agriculture" focused on value-added, direct-marketing, and exotic products. Inasmuch as its goal is to exploit niches, this alternative promises little economic relief to the majority of farmers selling into commodity markets now increasingly under monopoly control, for niches are by definition but a small part of the system.

And this alternative fails to directly address many issues of ecological sustainability. Given the ever-increasing concentration of market power in the economy, there appears little chance of major change until accumulating negative social and environmental impacts generate the requisite political will to manage the economy according to different priorities. Meanwhile, however, niche exploitation does offer a breathing space, sheltered from

the predatory market forces shaping commodity farming to test, refine, and slowly propagate sustainable practices until such time as the political will emerges.

Possibly the most effective first step in the restoration of sustainability is the re-integration of ruminant livestock with grain, vegetable, and fruit farming. Self-fed from permanent hay/pasture as they were originally designed, grazers like sheep and cattle are the fastest solar-powered soil-building tool farmers have. The savings possible with such management versus input-heavy systems permit small scale and the product diversity (rather than quantity) that is most effective in direct marketing. Small scale in turn allows time for processing and retailing, which in turn raises profits per product unit, which allows smaller scale, which frees up time for the intensive focus on holistic agroecosystem design and management need in sustainable systems.

Integrating animals and plants opens opportunities for pest control in both, via system design rather than purchased inputs. Further increasing animal and plant diversity increases the potential for adopting sustainable practices, and it is more feasible the smaller the scale.

Livestock Alternatives for Small Farms - Beef

Martha Mewbourne

Farmer

Nickelsville, Virginia

This discussion will focus on alternative marketing opportunities for small beef cattle farmers in Southwest Virginia/Northeast Tennessee. Traditional southeastern cow/calf producers consistently face the problem of "having to take" the least amount possible for their calves. Most of these farmers have fewer than fifty cows and thus must either sell through the stockyards or try to group a similar lot with their neighbors or a marketing group.

Options for the small cow/calf or stocker producer can include direct-marketing beef in either wholes, halves, or retail cuts as either a fresh or frozen product. By developing a niche market product (hormone-free, antibiotic-free beef) and selling directly, this late life farmer has been able to successfully make about twice as much per sold calf.

At present there are no other producers in the Southwest Virginia/Northeast Tennessee region direct-selling locally produced, USDA-inspected specialty beef. The demand is greater than the supply. The presenter will discuss production, pricing, packaging, and promotion strategies. Regulatory restrictions, insurance issues, and marketing techniques will be identified.

This successful small farmer has demonstrated that the old philosophy of "we've always done it this way" is not always the best way. Her new approach to cattle marketing has brought her a greater sense of product pride as well as greater financial rewards.

Opportunities in the Evolving Range/Pastured Poultry Industry

Steven Muntz

Appalachia Program Manager
Heifer Project International

INTRODUCTION

Quietly, but steadily, the number of pastured and range poultry producers is increasing in this country. The increase is happening quietly because many of the producers are raising and selling the poultry directly from their farms, and it is difficult to say how many such producers exist. One indication of the growing interest in pastured poultry production is the membership of the American Pastured Poultry Producers Association, founded in 1997, which already has a membership of nearly 500.

Two of the most important considerations farmers need to investigate prior to initiating a pastured or range poultry enterprise on their farms are 1) the type of production system they will use and 2) how they plan to process their birds. In the interest of time, only production of meat birds will be considered in this presentation.

Pastured and Range Poultry Production Systems

The Salatin Model¹. The production system most commonly in use today is the Pastured Poultry model developed by Joel Salatin of Polyface farms in Virginia. Salatin's model involves the use of floorless pens that are moved across the pasture daily. Salatin's pens are 10' x 12' by two feet high and generally house about 85-90 chickens. The frame of the pens is primarily made of treated one-inch lumber that is ripped into two- or three-inch widths. Two-by-two lumber is used in places requiring greater strength. The frame is covered with sheet aluminum and one-inch chicken wire. Many people have worked on variations of this design using UV treated PVC pipe, rebar, and other materials. The key to the pen, regardless of construction materials, is to make it light enough to move by hand, but heavy enough that the wind won't carry it off.

Salatin uses Cornish-White Rock cross chickens in his system, as do the proponents of nearly all other production models. This cross is the standard in the commercial industry, grows very quickly, and is a tremendous meat producer. On the down side, it is not a particularly hardy bird, nor is it a good foraging bird. Typically only about 10-20% of the bird's feed needs are met from

forage and insects. In all models, the birds will be better foragers if the pasture is kept short and succulent. The birds go into the pens at 2-3 weeks of age and are typically harvested at 8 weeks. Other breeds and strains are under consideration, but few have been used extensively.

Chickens in the Salatin model are somewhat protected from predators by the pen, and the concentration of chickens in the pen has the added benefit of concentrating their manure on the pasture. Some believe that the pen used in this model is too restrictive of the birds. They should have more room to roam. Salatin's response to this is that the Cornish cross chicken doesn't roam much to begin with and that the forage needs to be brought to the bird.

Herman Beck-Chenoweth Model². Herman Beck-Chenoweth's model of free-range poultry production utilizes an 8' x 16' skid house that is moved periodically with a tractor. The skid house houses the birds in the evening for predator protection, and the birds roam freely out from it during the day. Birds will typically range about 40 feet out from the house. Beck-Chenoweth recommends using 200-400 birds per house, harvesting some of the birds along the way to provide more space for other birds as they get larger. This model requires less labor, as the houses are only moved when the birds have denuded an area of 4-5 feet around the skid. This usually occurs every 3-4 weeks, but it will depend on weather conditions.

As the birds are allowed to roam freely, predation is a chief concern in this model. Beck-Chenoweth highly recommends a good perimeter fence, along with keeping the field perimeter closely mowed to discourage local dogs and other predators.

SEMI-INTENSIVE³. The semi-intensive model is a larger-scale production system common in Europe. A permanent house is used, and the birds are allowed access to pasture from the house. Often several paddocks are provided for an adequate rest and recovery period for the pastures and to reduce the risk of disease. Several thousand birds can be raised in houses of this nature, assum-

ing adequate pasture is provided. In addition, labor requirements can be significantly reduced. David Wilson, of Louisville, KY, tried out this system in the U.S. with several different contract growers and a special French meat breed of chickens developed for range production, known as LaBelle Rouge.

THE CHICKEN TRACTOR - ANDY LEE AND PATRICIA FOREMAN⁴. The chicken tractor model is not a specific model, but rather the concept of putting the chickens where they will do the most good and be the easiest to care for. Lee and Foreman draw heavily on the concepts of permaculture and the theory of "Relative Location," meaning that elements in a farming system should be placed in relationship with each other so that they assist and support each other.

As such, chicken tractors are often connected with gardens for their ability to provide fertility, insect control, soil scratching, and companionship for the gardener, but a "chicken tractor" can be much more. In this concept, any number of different models could be considered viable, including the Salatin model or the Beck-Chenoweth model, depending on how those models are planned into the total farming system. Lee and Foreman's farm in Virginia is a farm of many chicken "trial and error" experiments designed to learn how various systems work in relationship to the goals of the farmer.

POULTRY PROCESSING

Often, the biggest stumbling block to prospective range poultry producers is processing the chickens. The number of federally or state inspected independent poultry processing plants in the country has been declining for many years to the point that in some states (Kentucky, for example) there are currently no facilities available for independent poultry producers to have their chickens legally processed.

Following the lead of Joel Salatin, many producers have built small processing plants on their farms. The farmers develop a base of customers and direct market their chickens right off the farm. On-farm processing allows the producer to reap nearly all the financial benefits for the labor provided. Farmers in some states have developed mobile processing units so that several farmers can share the same equipment.

REGULATIONS FOR ON-FARM PROCESSING. The decision to process poultry directly on the farm must be carefully considered. There are both federal and state regulations that govern the processing of poultry on the farm, and farmers considering this option will need to learn about

those regulations.

Through a recent SARE (Sustainable Agriculture Research and Education) grant, Heifer Project International (HPI) contracted with the National Center for Agricultural Law Research and Information (NCAL-RI) to develop a summary of the federal and state laws regarding on-farm processing of poultry for all 50 states, Puerto Rico, and the Virgin Islands. To date, summaries for only the 13 Southern states, Puerto Rico, and the Virgin Islands have been completed. The other states' summaries should be completed by mid to late 2000.

In most cases, a farmer can raise and process at least 1,000 birds annually as long as the birds are sold directly to end users. Anyone interested in a free copy of the legal summary can contact HPI or the ATTRA (Appropriate Technology Transfer for Rural Areas) program. HPI's phone number is 800-422-1311 (ask for someone in the USA/Canada program). ATTRA's phone number is 800-346-9140 (ask for Anne Fanatico). In addition to federal and state laws, state and local health departments should also be consulted.

INSPECTED PROCESSING FACILITIES. If on-farm processing isn't for you, then you should check into state or federally inspected processing facilities available in your state. You should be able to get this information from your state department of agriculture. If you already know of a plant that processes poultry, then you are one step ahead of most people. Before you raise any chickens, though, consult with the processor and your state department of agriculture to make sure that the chickens processed from that facility can be legally sold. Also figure out how your customers will get their chickens. Will they pick them up from the processing plant, or do you want them to come back to your farm to get them? Perhaps you want to deliver the birds to retail stores or restaurants. Transportation of the chickens after processing is another whole regulation issue that must be understood before you kill the first bird.

CONCLUSION

Pastured and range poultry production can be a very rewarding farm enterprise, both financially and emotionally. Customers truly appreciate the alternative product that you have made available to them. Anyone who is serious about starting a range poultry enterprise should visit some producers, learn which model best fits their farm, and determine which processing options are available in their region.

REFERENCES

1. Salatin, Joel. 1994. Pastured Poultry Profit\$

- Polyface, Inc., Swoope, VA.
2. Beck-Chenoweth, Herman. 1996. Free Range Poultry Production & Marketing, Back Forty
 3. Books, Creola, OH.
 4. Fanatico, Anne. "Range Poultry Production Systems," APPPA Grit, Issue 9, p.1.
 5. Lee, Andy and Foreman, Patricia. Chicken Tractor, Good Earth Publications.

Problems and Solutions to Pesticides' Availability

F. D. Bullock

University of Tennessee Agricultural Extension Service
Nashville, Tennessee

The control of pests - to include insects, diseases and weeds - is a major problem to the small farmer. Unlike the large mono-crop growers of crops such as soybeans and corn, the small farmer must diversify with a variety of crops grown on small acreage. As with most businesses, the development and marketing of pest management tools are driven by economics. Therefore, research, product development, and marketing do not address the small farms.

Consequently, the lack of pest management tools severely contributes to the economic losses to the small farmer and the continued loss of the small family farms. This encourages the illegal use of pesticides, which can seriously affect the health of the human population, animals, and the environment.

To help address the pest management needs of the small farmer, various governmental and public agencies must seriously get involved. This will include universities and local, state, and federal governments, including the Environmental Protection Agency. Research, product development, and marketing must directly address the small farms with emphasis on integrated pest management. Present and future registered pesticides must be

packaged in small quantities that can be easily bought and utilized without excess. This will be economically feasible and at the same time discourage illegal uses and environmental contamination.

Another approach to make pesticides affordable and available to the small farmer is to encourage EPA pesticide manufacturers and local distributors to set up a possible "pharmaceutical" distribution system. In this way a small farmer can buy only needed quantities. In addition, the success of any pest management program will require increased educational emphasis.

Animal Feeding Operations (AFOs) and the Environment

Ronald A. Harris

Natural Resource Specialist

Natural Resources Conservation Service (NRCS)

Animal Husbandry and Clean Water Programs Division

Beltsville, Maryland

The problem addressed is the emerging issue of live-stock manure and the environmental/health concerns associated with animal feeding operations. The concern is that animal agriculture has been identified as a non-point source pollutant contributor in many watersheds across the nation.

The recently released USDA/EPA Unified National Strategy for Animal Feeding Operations (AFOs) set a national expectation that all AFO owners and operators will have planned and be implementing Comprehensive Nutrient Management Plans (CNMPs) by the year 2009. NRCS workload analysis developed by the states indi-

cates that about 300,000 AFOs will need assistance to develop CNMPs. A significant number of the AFOs needing assistance are operated by limited-resource and historically underserved owners and operators. Small and limited-resource farmers often lack the financial resources needed to implement new technology. Coordinated research, technical innovation, compliance assistance, and technology transfer relative to AFOs are critically important if limited-resource and small farmers are expected to implement CNMPs.

Agroforestry -- A Role on the Small Family Farm

H.E. 'Gene' Garrett

School of Natural Resources
University of Missouri-Columbia

Small family farms, according to many in the scientific community, are destined to disappear. With advancements in biotechnology and the efficiency of corporate farms, it has become increasingly difficult for the small family farm operator to compete in the conventional markets of soybeans and corn. However, there is a crop for which there is great demand that, when combined with other cash crops, could provide unique opportunities for the small farm.

Projections made in recent years by the USDA, Forest Service, suggest a 38% increase in domestic wood needs by the year 2050. This comes at a time when harvest on federal and state lands is being reduced due to public pressure and, many are advocating dramatic increases in the use of biomass products and bioenergy to reduce our dependence on foreign oil. With projected increases in domestic wood demands and the availability of vast acreages of "underused" land on small farms, the adoption of agroforestry would go a long way towards satisfying a national need while providing crops and a reasonable income for the small farm operator.

Agroforestry, which capitalizes on the biophysical interactions created when trees and other crops (i.e., livestock, conventional row crops, horticultural crops etc.) are grown together, bridges the gap between production agriculture and natural resource management providing both production and environmental benefits. Among the benefits that can result from the interactions created are, increased crop production, alternative crops and diversified rural economies, improved water quality, filtering and biodegrading of excess nutrients and pesticides, reduced flooding, microclimate moderation, diversified habitats for wildlife and people, and the restoration of degraded ecosystems.

Success from agroforestry for the small farm

operator is tied to maintaining a cash flow while waiting for the trees to produce fruit (e.g., pecans, walnuts, chestnuts), speciality products (e.g., pine straw, floral green products, chemicals), or wood. This is achieved by carefully selecting crops that are grown with the trees for which known markets exist and diversifying so that several markets can be explored simultaneously. Short-rotation biomass production in alleyways between rows of a long-term tree crop is just one of many options for providing a cash flow while waiting for the long-term tree crop to come into production.

Agroforestry provides the opportunity to place millions of acres of idle or near-idle farm lands back into production while helping to meet a projected national need. Agroforestry can provide multiple long-term benefits to the small family farm operator and society in general. Its broadscale adoption would enable us to better meet the ecological, socioeconomic and cultural needs of land management, provide raw wood products to meet our nations needs and help preserve a rural way of life that has made America great.

Trees & More

Short Term Income Possibilities

Shelby G. Jones*

Forest owners can now enjoy annual income from their woodlands and still manage for high quality sawlogs and veneer logs. No, there hasn't been any new super growth hormones developed! However, foresters have begun to focus on non-traditional items that nature produces in and around forests every year..potential products that can be marketed for annual income. A list of these potential products would number in the thousands, giving every owner a unique opportunity to select something that fits their specific resource and management situation. Even small acreage is capable of producing these products. Recreational properties of only a few acres can be just as productive for these products as a tract of several hundred acres. If you own forest land and would like to explore ways to generate short-term income from it, the next few paragraphs should prove interesting. Likewise, non landowners may find opportunities for value-added businesses.

This whole group of products is known by several names: Special Forest Products, Alternative Forest Products, or Non-timber Forest Products. No matter what you call them, the diversity of Missouri's forests becomes evident as we identify some of the products. While many of us have been aware of many of these products for a long time, there are probably surprises for everyone. Modern society has lost its familiarity with many of the ancient remedies, edibles, and materials produced in our forests. However, the current popularity of naturopathic medicines and health food supplements is renewing interest in compounds derived from plants, many of which grow in forests. Wild edibles are also of interest to many who find organically grown foods desirable. Suddenly we have discovered that what we thought were only small localized markets are actually global. Forest landowners who are willing to seek them out have access to all the levels of markets. As we take a closer look at some of these products, you might want to ask yourself what similar products you might be able to generate. In a sense this article is meant to stimulate your thinking about new ways to make forest land more productive.

CONES & SEEDS

Cones from coniferous species offer a variety of market possibilities. Since the cone contains seed, one of

the most obvious markets for ripe cones is for seed to supply tree nurseries throughout the country. Cone harvest is sometimes done in conjunction with a timber sale timed to occur when the cones are ripe. Cones can then be more easily picked from the tops remaining following the removal of logs and pulpwood. There are companies who specialize in this business pay landowners for the rights to harvest cones. Of course, a landowner could also harvest and sell cones to a seed broker or dealer. Sometimes, for specific purposes, trees are climbed to pick cones but this is best left to the professional.

Cones which have opened are also in demand for various floral, wreath, and potpourri products. Following seed extraction, many nurseries now sell opened cones to craft markets. Almost any species of cones, from very small fir cones to large ponderosa pine cones are marketable. Cones are most often sold on weight basis, but may also be sold by volume (e.g. Bushel) or may be individually priced for very large or unusual specimens. Prices average \$.30-\$.60 per pound or the equivalent.

Hardwood seed crops can be handled in a similar manner. There is a growing market for seed of both tree and shrub species for native plant nurseries. These nurseries are experiencing increasing demand for native plants to be used in landscaping, windbreaks, shelter belts, and other horticultural uses. Seed from understory plants and shrubs are equally desirable and seed from medicinal plant species may be marketed as those species are grown in a cultured environment. A thorough inventory of all your forest plants would be a good idea to determine if you have potential for harvesting multiple seed crops.

Prices vary according to relative abundance of the species and the difficulty of harvesting the seed. Price lists are available from larger seed dealers and seed supply wholesalers. Landowners can harvest seed themselves or sell harvesting rights to a seed collection company. At this point, seed certification programs do not generally exist for most species but timing of harvest and care of seed following harvest are important to assure quality and maximum viability. Seed production is variable, even in local areas. For consistent income it is suggested that landowners focus on several different species and become familiar with seed production

requirements for each. You should also check for special state regulations regarding the species being harvested, although there are few restrictions for harvesting on private land. For example, in many states there are special regulations for harvesting ginseng involving documentation of amounts harvested. The best initial contact might be your state forest nurseryman or a seed collection company for information specific to your state.

DECORATIVE WOOD & HORTICULTURAL PRODUCTS

Unusual parts of trees such as burls, conks, shelf fungus and dwarf mistletoe infected branches are desirable for many purposes and can be sold in most areas of the country. Distorted grains patterns, colors, textures are appealing for wood turnings, veneer, carvings, or artistic sculpture. Diamond willow walking sticks from willow infected with canker is very popular. In Missouri, oak, hickory, willow, redcedar, walnut, sassafras and staghorn sumac are harvested when 1"-1.5" in diameter for walking sticks. Some have faces carved on the top, others are debarked, while many are simply cut and dried before marketing. Wholesale prices average \$1.00-\$2.00 per 3-4 foot stick. Markets for walking sticks are far from saturated.

Cypress knees, fruitwood grafts, pine knots, knot holes, and limb crotches are a few more products worth mentioning. All can be marketed through hardwood lumber outlets, carving shops and speciality wood supply houses. A few specialty wood supply catalogs also list a variety of these types of products. Horticultural supply companies occasionally stock this type of material for specialty bouquets, floral arrangements, bases, etc. Don't overlook branches and twigs as products. Unusual bark, color, texture, buds, or shape are desirable for horticultural product markets. Thick (2-4") cottonwood bark is prized by wood carvers because of its color, texture and unique presentation options.

Oak, hickory, and elm (with bark still attached) sticks in a diameter range of 1/2" to 1 1/2" are purchased for manufacture of bent-wood or rustic furniture. Fresh 4 foot sticks sell for approximately \$.50 each. Longer sticks, up to 10 foot long sell for more. Eastern redcedar is also used for similar products. Sticks can be shipped to manufacturers via UPS in bundles of slightly less than 100 pounds. The shipping cost is approximately \$60.00 per bundle.

Burls, figured wood, spalted wood, or woods of unusual color are also in demand for turnings, wood pens, furniture panels, veneer, and many other specialty uses. These are items that are relatively scarce and highly desirable, therefore it is not uncommon for them to be sold individually. Spalted wood usually develops in logs or trees that have been lying on the ground for some time and the decay process is just beginning. Spalting usually occurs in the sapwood portion of the tree and the

heartwood may still be usable for lumber or other solid wood products. Hint: Old log decks sometimes are a good source of this material. Decorative woods are generally sold by weight. The price per pound is highly variable and depends on the species, rarity, and quality of the item. It is not uncommon for items in this category to change hands many times before being processed into a consumer product. Global markets are very active. The Internet is very helpful in locating dealers and individual markets.

MEDICINALS & PHARMACEUTICALS

Medicinal compounds used for naturopathic remedies include a large number of herbs used to make teas and oils that are alleged to have curative or therapeutic effects on common ailments. Actual medicinal properties are sometimes speculative, however these markets are well established and growing. There are, however, plants and trees containing specific chemical compounds used by manufacturers of pharmaceutical drugs. Wildcrafting or gathering these plants have historically provided income for many rural families. While cultivation techniques for these species will eventually assure uniformity and sustainability of harvest levels, current demands exceed supply. agroforestry techniques currently being developed offer much opportunity in this area.

Of course, pharmaceuticals are not the only use for many of these plants. Dyes, cosmetics, fungicides, and insecticides are additional products in this category derived from relatively common plants. Several botanical companies with headquarters in Missouri purchase and market botanical plant material throughout the world. All regularly publish price lists and specifications for the plants or plant parts they purchase.

There is much publicity about the value of a few plant species that are in high demand. Some of these plants are relatively rare and may actually be listed as rare or endangered. Landowners are advised to become familiar with harvesting regulations that might be applicable if these plants are marketed. As mentioned previously, sustainability of wild populations of these plants should be a primary concern.

BARK

Bark is another item in demand for medicinal and "natural" food supplements. We recently were contacted by a company in Idaho interested in purchasing 10 tons of slippery elm bark. In this case bark is stripped from small saplings, obviously killing the trees. Sustainability is a definite problem in this case. However, landowners with slippery elm trees large enough to produce seed might consider using some of the seed to plant small plantations grown exclusively for bark production. In this case, the bark of saplings might be more valuable than logs of a mature elm tree and

have a much shorter rotation.

Cottonwood bark is prized by wood carvers, who carve faces and caricatures from the thick plates. It is also used for bases for floral arrangements and crafts. It is softer than the wood, but dense enough to maintain detail. Pieces 3-4 inches wide, 10-12 inches long and 2-3 inches thick would sell for \$5-\$15.00 at craft and carving shows. White and paper birch and aspen bark is also in demand for crafts, boxes, containers, and decorative uses in areas of the country where it occurs naturally. Bark with distinctive patterns (eg. Hackberry, winged elm, persimmon, etc.) or color may have a market in your area. On the negative side, sustainability can be a significant consideration for many bark products.

RECREATIONAL ENTERPRISES

Use of private forest land for recreational pursuits offer private landowners excellent potential for annual income. The landowner has almost unlimited options in this area, from doing almost nothing to very intensive development. The old real estate adage of "Location, Location, Location," certainly is true here. If your land is located near population centers, your options are probably greater than if it is in a very remote area. However, remoteness is a commodity that can be marketed also. Fee hunting and fishing have been sources of income in many areas of the country for many years. Urban families are now willing to pay for nature photography, harvesting wild edibles, farm vacations, hiking, photographic tours, picnic areas, and bird watching to name only a few.

Allowing public access to your private property is not without risk. Liability insurance rates vary widely for recreational enterprises. Insurance is a consideration that must be thoroughly investigated prior to any business start up.

Summary

In this short article, only a few of the thousands of the potential forest products could be named. For the innovative landowner or entrepreneur, however, these brief descriptions will point the way to specific products and markets. To begin research, it is suggested you obtain a copy of Income Opportunities in Special Forest Products, Self Help Suggestions for Rural Entrepreneurs; USDA-Forest Service; Agricultural Information Bulletin No. 666, 1993. The initial printing has been sold out, but most libraries can obtain microfiche copies.

Individual chapter may be downloaded from a web site at the Forest Products Laboratory in Madison, WI.
www.fpl.fs.fed.us/documnts/usda/agib666/.htm

You might also want to visit a web site specifically for Special Forest Product information. It is maintained by Virginia Tech and is regularly updated with information relative to the Midwest as well as other parts of the country. www.sfp.forprod.vt.edu

This manuscript was originally prepared for a Missouri Conservationist article published in 1999. It is included in this packet as a general overview of the diversity of "special forest products."

* Shelby Jones retired from the Missouri Dept. Of Conservation after a career of 32 years with Forestry Division. Much of his career was spent in the field of wood products utilization & marketing. In the past few years, Shelby has focused on non-traditional products of our woodlands and how these products can generate annual or short-term incomes for private forest landowners. His work and ideas have been presented to audiences throughout the Midwest. He is available for personal assistance or advice to businesses or landowners throughout the Midwest.

Silvopasture Management

T. R. Clason

Hill Farm Research Station, Louisiana Agricultural Experiment Station
Louisiana State University Agricultural Center, Homer, Louisiana

INTRODUCTION

The use of silvopastures is an agroforestry practice that intentionally integrates trees, forages, and livestock, forming a structural system of mutually beneficial interactions. Unlike forest range grazing, silvopastoral management practices focus on interactions among components rather than the individual components.

Silvopastures are developed by establishing improved forages under an existing tree canopy or by planting trees on pastureland or abandoned cropland.

Productivity is determined by the extent to which the integrated components benefit rather than impede each other. Subsequently, component productivity and its impact on the other components determine the success of a silvopasture. Trees produce marketable yields of wood commodities and enhance livestock production by providing shade and windbreaks. Forage crops provide livestock with a dependable grazing resource, provide trees with supplemental fertilizer, and serve as living mulches for weed suppression and soil erosion reduction. Livestock generate a short-term cash crop and control competing understory vegetation.

A silvopasture is neither a timber nor a livestock production system. It is a land-use management system that simultaneously maintains production continuity of commercial timber and livestock enterprises.

TREE COMPONENT

Thinning. Generally, plantation regeneration practices plant more trees than required for a final crop. This ensures adequate growing site occupancy during early plantation development and provides a larger pool of trees for final crop tree selection. A pre-commercial thinning can be applied between ages 3 and 6 to remove surplus trees that impact final crop tree growth and forage production potential. This is a noncommercial operation that uses mechanical or chemical means to remove poorly formed and less vigorous trees. Its efficiency can be improved by selecting potential crop trees prior to the thinning.

Commercial thinnings are used to enhance final crop tree

growth, maintain forage production, and provide intermediate income for the silvopasture investment. Prior to initiating a commercial thinning, consider the following factors:

- Determine if a market exists for the extracted wood.
- Develop a harvesting plan that includes landing sites and designated skid trails.
- Employ a high-quality certified harvesting contractor.
- Evaluate the financial impact of the thinning on the silvopasture investment.

Pruning. Pruning removes green branches from the stems of selected crop trees. Although pruning is costly and slows tree diameter growth, it produces knot-free wood of superior quality and high value. Without pruning, the low tree stocking densities required for silvopasture management would yield poorly formed trees with large branches, excessive taper, numerous forks, and very low value. Removing the lower branches will enhance sunlight and aeration beneath the tree canopy, improving forage productivity.

During the pruning operation the length of stem from which limbs are removed is termed a pruning lift. The objective of pruning is to develop a defect core of uniform diameter in the center of the stem so that the inferior wood is isolated from the more valuable knot-free wood. Defect core diameter includes the limb whorl branch stubs and the occlusion scar tissue, but it is the limb whorl branch stub diameter that triggers a pruning operation.

The target stub diameter, which varies by site, has an upper and lower limit. These limits are determined prior to the first pruning operation when mean crop tree height reaches 5 to 6 m. The upper limit is the mean stump diameter (15 cm above the ground) for all crop trees and the lower limit is the mean stem diameter 3 m below the tip of all crop trees. The upper and lower limits of the target diameter normally range between 13 and 19 cm. Since a homogeneous yield of knot-free wood has a marketing advantage, a pruning operation should consider the following factors:

- Pruning should be initiated when crop tree height averages 6 m.
- Crop trees should be pruned when the lowest limb whorl branch stub diameter approaches the upper limit of the target diameter.
- Pruning lifts should not exceed the height of the lower target diameter or remove more than 50 percent of the live canopy.
- Number of pruning lifts should be adequate to produce a 6.5m knot-free log.

FORAGE COMPONENT

Fertilization. After the forage crop is established, annual fertilization is necessary to maintain forage production continuity. Fertilization strategies will vary depending on location, grazing objective, animal grazing density, and primary forage crop, warm or cool season crops with or with legumes. Mineral nutrients, particularly phosphorus and potassium, should be applied at rates recommended for a given forage crop prior the primary growing season.

The preferred nitrogen fertilizer sources are ammonium nitrate and ammonium sulfate, rather than urea. Nitrogen fertilizer applications should be split between the early and middle portions of the growing season. Soil testing should be used to monitor mineral nutrient levels, such as calcium, magnesium, sulfur, phosphorus, and potassium. If legumes are part of the forage crop component, then soil testing is necessary to monitor pH

and determine liming requirement. If available, broiler litter or other organic waste material may be used as an alternative to commercial fertilizer.

Grazing. Livestock grazing should be managed so that forage quality is maintained and tree damage is minimized. Since young trees are vulnerable to browsing damage, grazing should be excluded until trees attain a height of 2 m. The timing and duration of grazing depends on animal stocking density and the method of pasture utilization. Animal stocking density should not exceed 2.5 animal month units, and pasture utilization should be on a rotational basis. For most landowners, a multi-pasture rotation system would be more efficient than the more intense system of numerous small paddocks. Electric fencing, portable water systems, and strategically placed mineral blocks can be used to encourage uniform animal distribution.

LIVESTOCK COMPONENT

Livestock Species. The primary livestock choices for a commercially productive system are cattle and sheep. All types of beef cattle - dry pregnant cows, cows and calves, breeding cows, and stocker cattle - perform well in a silvopasture.

Agroforestry - Forestland Grazing

George Owens

Chipley, Florida

Combining the production of pines and cattle on improved pasture offers an opportunity for multiple-commodity yields. Additional timber can be produced by planting closer within the rows and planting double rows with wide spacing, to increase tree density while maintaining open stands for grass production between rows.

Cutting hay from the land while waiting for the trees to reach an animal-resistant and pest-resistant height offers an opportunity that needs to be used in an agroforestry management system. Since this approach to agroforestry is not trouble-free, good management is required. Landowners, especially those with small holdings, should consider integrating pines, pasture, and cattle as an alternative to single-commodity management of their land.

OPERATION DESCRIPTION AND MANAGEMENT

Step 1: Originally the cow herd was mostly 1/4 to 1/2 Brahman cross cows. This enabled me to take advantage of increased hybrid vigor and foraging ability over straight English cross cows. In recent years the cow herd has been changed to mostly Longhorn cattle. This change was made due to the increased need for roping and dogging steers in the Florida Panhandle. The calf crop are presently sold for recreational use at about one year of age.

The breeding season lasts from April 1 through July 28. Calving begins about the second week of January to take advantage of ryegrass and crimson clover production.

Step 2: The operation includes both solid set timber (8'x10' spacing) and wide-row set timber (4'x8'x40' spacing). Trees are planted in an east-west row alignment for maximum sunlight exposure on grass. The wide-row spacing area includes 50 acres, consisting of 30 acres of Pensacola Bahia grass, 15 acres of slash pines, and 5 acres of ramps, cow pens, water area, and shade.

Step 3: Timber management has included using pre-

scribed burning every 3 years to hold down accumulation of pine straw. The first year of burning should be 6 to 7 years after planting. Thinning occurs first at 10 to 12 years post-planting, and every 5 years thereafter.

Step 4: Hay production from the bahia grass between the 40-ft.-wide rows of pine trees is excellent for the first 4 years.

Step 5: Facilities include portable cow pens and high-tensile electric fencing. Interior fencing is generally one wire, placed between rows of trees.

Riparian Forest Buffers Are the Right Thing to Do

Lon Strum

Farmer, Roland, Iowa

With Richard Schultz, Iowa State University, Ames, Iowa

In 1994 I installed a riparian forest buffer system along Bear Creek on my farm in north central Iowa. I had learned about the buffer system by watching the one that was installed on the Ron Risdal farm, just downstream from my farm.

Some of the worst flooding on record occurred in 1993 and made it difficult to cultivate much of the floodplain on my farm. The same flood did no damage to the four-year old buffer system of trees, shrubs, and native grasses that had been planted on the Risdal farm. I was interested in improving the wildlife habitat on my farm as well as improving the condition of the creek.

The Agroecology Issue Team (AIT) of the Leopold Center for Sustainable Agriculture at Iowa State University installed the system. The trees in the buffer help to stabilize the banks and store nutrients. The shrubs add diversity for wildlife and help slow flood waters because of their many stems. The native grasses are great for trapping runoff from the crop fields and for providing cover for pheasants.

The system also includes streambank bioengineering techniques that use plants and rip rap to stabilize banks. Small wetlands are also used to clean field drainage tile water before it enters the creek. The Clean Water Action Plan recently named the buffer system on my farm and several adjacent ones as one of 12 National Restoration Demonstration Watersheds.

Because I installed my buffer before the present CRP program, I was not able to enroll it when the program became effective. The AIT used research dollars and funds from Pheasants Forever and the Stewardship Incentive Program to install it. While this agroforestry practice is presently not providing any direct economic benefits to me, it will provide quality timber down the road.

It does provide me with excellent habitat for pheasants, deer, and other birds and animals. I would recommend it to neighbors who want to help improve water quality, wildlife habitat, and timber production. They can also get good cost-share from the present CRP. I think buffers are the right thing to do.

Grant Writing for Farmers and Non-Governmental Organizations

Margaret Krome

Agricultural Policy Coordinator
Michael Fields Agricultural Institute
East Troy, Wisconsin

and

Cris Carusi

Executive Director, Nebraska Sustainable Agricultural Society
Hartington, Nebraska

This workshop aims to help small farmers or groups maximize their use of a wide variety of federal programs. It will cover three topics:

The first is designing high-quality projects.

The second is identifying federal programs offering potentially useful resources, especially conservation incentive programs. One resource used in this discussion is *A Guide to USDA and Other Federal Resources for Sustainable Agriculture and Forestry Enterprises*, published in 1998. Workshop participants will receive a free copy of the Guide, which describes program resources in value-added and diversified agriculture and forestry; sustainable land management; and community development.

The third topic addresses ways to maximize your chances of getting proposals or projects funded or approved by federal programs. It will focus on grant-writing skills, offering examples of grant-writing dilemmas and some solutions to them, as well as tips on why proposals commonly do NOT get funded.

Electronic Publishing: How to Put You and Your Programs on the Web

**Susan McCue, UC-Davis Small Farm Center
Davis, CA and
Karl Ottenstein, Spring Creek Organic Farm
Sandpoint, ID**

Don't have a web site yet? This session will get you excited about how easily you can place information on the Internet and interact with your peers or customers/clients. You'll learn approaches for making existing publications Web-ready, creating new content just for the Web and a sense for the breadth of Internet communications options available and the appropriateness of each. Practical tips and examples will be combined with personal experiences from Susan McCue's University of California Small Farm Center site and Karl Ottenstein's wool marketing site.

Grant Writing for State and County Faculty:

Addressing Accountability and Evaluation Concerns

Robin Shepard

Assistant Professor of Life Sciences Communication and
Extension Water Quality Coordinator, University of Wisconsin-Madison

Agencies and people who administer grant programs are very concerned about how their grant funds are used. But evaluation is more than fiscal accountability. In addition to a detailed budget, a grant proposal should describe how program effectiveness and efficiency will be evaluated.

As our programs become more dependent upon grants and gifts, those who provide such funds will continue to become more concerned about such attributes - especially in a competitive situation where one proposal is selected over another. Evaluation should not be directed only at recording positive program results but should also assess the way a program is implemented and how lessons learned can be applied to future programs.

EVALUATION - NOT AN AFTERTHOUGHT OR ADD-ON

Evaluation needs to be incorporated into program planning at the very beginning. Too often evaluation is discussed only at the end of a project. Such discussions in program design help to identify possible impacts that can be monitored and measured throughout the life of the project.

PLANNING EVALUATION IS KEY

Most grant applications will not require a full evaluation plan. They will, however, require enough detail to determine what type of information will be collected and through what methods. The basic evaluation plan should consider:

- what information is important to collect over the life of the project (i.e., knowledge, skills, attitudes, and/or behaviors);
- how the information should be collected (i.e., surveys, focus groups, interviews, meeting questionnaires, etc.);
- who will collect the information (i.e., project staff or an external professional);
- the time frame for information collection (i.e., weeks, months, is it a one- or two-time comparison); and
- how the results will be communicated (i.e., report, newsletter, news releases, memos, personal discussions, etc.).

Link evaluation to project's objectives

An important initial step in program planning is to develop a clear description of what the program will achieve. The evaluation plan should describe how progress will be monitored toward achieving program goals. Clarity of program objectives and linkage to the evaluation plan are important.

It is also important to develop program objectives as measurable statements. For example, an agricultural program aimed at reducing excessive nitrogen application might have an objective that states, "More than 50 percent of the farmers in the project area will decrease excessive nitrogen application by 30 percent." This specific objective will focus on both the implementation of the program and the evaluation strategy on recording information that is central to the program.

INQUIRE AND ASK QUESTIONS OF FUNDERS

Most grant program administrators do not mind getting questions about application materials and procedures. It is also important to understand what specific information - especially impact indicators - the funding entity wants to know. While some funders will be content with mere participation rates, others will want to know about behavioral changes, economic consequences, or environmental impacts. Some may have general budget percentages that they recommend be dedicated to evaluation. Knowing whether the funding entity has specific requirements will help to determine the amount of time and budget to dedicate to evaluation in the proposal.

STAKEHOLDER INVOLVEMENT IS IRREPLACEABLE

Getting ideas from the funding entity is important but it can also improve both evaluation and program implementation if members of the target audiences are included in the planning process. Asking farmers about what they view as important impacts of the program will allow gathering of that information. It will also identify the types of reports and information that should be communicated to program participants, both during and after the program.

CONSIDER DIFFERENT LEVELS OF EVALUATION

Program evaluation is usually a combination of formal and informal data collection processes. Formal evaluation includes surveys, focus groups, interviews, and systematic field observations. Informal evaluation may be based on discussions with the target audience, meetings, staff contacts, and case files. While formal methods are deliberate and focused on specific points, they usually take more time and are generally more costly than informal methods. It is usually more advantageous to stress formal evaluation procedures in grant proposals.

IMPACTS ARE DIFFERENT FROM INPUTS

Impacts of programs focus on answering the "so what" question associated with program accomplishments. Impacts are changes in the target audience resulting in social, economic, or even environmental effects. Inputs are usually descriptive information about the project, such as staff hours, numbers of activities, or participation results. As a general rule, inputs describe internal program implementation and are important in understanding how the program was administered. Impacts focus more on what happened as a result of the program and can include practices adopted, dollars saved, or environmental changes made.

Finally, most grant proposals do not require that all of the details concerning your evaluation be specified. It is best to focus on describing the overall approach, the level of information to be collected, the evaluation methods to be employed, and how the information will be used to improve future programs. Evaluation is not the central issue for most grant requests unless the grant is focused on evaluation research. Addressing that subject in detail in your proposal can, however, enhance your chances of receiving funding.

Accessing Information: Traditional and Nontraditional Sources

C. King Arkansas Land and Farm Development Corporation

K. Kroll, USDA-SARE

T. Maurer, NCAT-ATTRA

R. Macher, Small Farm Today

Moderator: **T. Parslow**, University of Wisconsin

Many small farmers and information providers have expressed the need for learning effective ways to access and use information from many sources, both inside and outside traditional institutional channels. Our workshop presentation will address these objectives:

- Provide a practical understanding of how non-governmental organizations, private publications, and federal and state programs each contribute to gathering, transferring, and organizing many kinds of information useful for small farmers and to those who provide information to small farmers.
- Through five case studies, describe how three national (ATTRA, SARE, Small Farm Today) and two regional programs (ALFDC and a North Central regional farmer information network) are equipping small farmers with more options and tools for sharing and accessing information in many forms.
- Offer tips and how to's that will help participants find other unique programs around the U.S. that take a cross-cutting approach to information resource development.

Assessing Information: Traditional and Non-Traditional Sources

Ron Macher

Publisher, Small Farm Today Magazine
Clark, Missouri

Small farmers (those with 179 acres or less/\$50,000 or less) have different informational needs than other farmers. There are three concerns in accessing useful information:

- What research is appropriate for small farmers?
- Has the research been done?
- Is it accessible to the farmers?

A series of questions may clarify small farmers' needs:

- What type of attitude/mindset is needed to locate information for small farmers?
- Do you view small farmers as relics of the past, or visualize them with a future in revitalizing rural communities through sustainable practices, value-added products, and direct marketing?
- How does farm size - small, medium, or large - relate to the type of information the farmers need?

- What kinds of information apply to small farmers?
- What types of crops and livestock apply?
- What are the appropriate technologies?
Machinery? Production methods?
- What resources - past and present - are available on alternative crops and livestock, sustainable methods, and direct marketing?
- Do small farmers have access to them?
- Do the farmers know the information is available?

A discussion of appropriate research for small farmers that universities, extension offices, and government agencies could be performing is in order, as well as the need for these offices to set aside funds for advertising.

On-Farm Research:

Incorporating Farmer Innovations into the Research Stream

Dan Anderson

On-Farm Research Coordinator

University of Illinois

College of Agricultural, Consumer and Environmental Sciences

Department of Natural Resources and Environmental Sciences

Agricultural producers possess valuable indigenous knowledge about their land and production systems. In the daily operations of their farms, farmers often develop innovations to solve problems and enhance production.

But farmer innovations rarely find their way into the university research mainstream. There are at least two good reasons why farmers should play a stronger role in agricultural research at land-grant universities:

- Not all farmer innovations work. There needs to be a means by which farmers can test their ideas with scientific rigor before implementing across the whole farm.
- Researchers need to remain connected to the real world. Unless there is a vital connection to the community they serve, agricultural researchers will spend valuable resources "answering questions nobody is asking" (Bullock, 1992).

Traditionally, land-grant agriculture schools have devoted resources and energy towards integrating research findings into the production stream. The predominant educational model has been top-down: universities generate information and deliver it to farmers via Extension. University research topics rarely originate with farmers. Rather, research agendas are strongly affected by funding sources, proprietary concerns, and increasingly narrow fields of study.

Consequently, the bulk of ag production and natural resource management knowledge generated through university research is done so without the involvement of those who will ultimately be affected by the research. The perception of many farmers is that the land-grant university no longer serves them; other "clients" with deeper pockets have separated the university from the community it was created to serve.

The benefits of active farmer participation in agricultural research are increasingly recognized by farmers and researchers alike. For the past several years, farmers in many states have conducted on-farm research designed

to answer questions of direct relevance to their own farming operations.

Much is accomplished through such effort. Farmers gain a greater understanding of their unique production systems and learn to use simple research methods to answer questions on a range of topics. Unfortunately, farmers are limited in what they can accomplish alone. By nature, many research projects require much more time, equipment (e.g. laboratory), and technical knowledge than farmers are capable of providing.

At the same time, land-grant institutions are re-discovering their originally intended purpose - to serve the community through which they are funded. This is among the recommendations of the National Research Council Board on Agriculture's Committee on the Future of Land-Grant Colleges of Agriculture (National Academy Press, 1996).

In another example, the president of the University of Illinois has made it his top priority to reconnect the University to the people of Illinois. Agriculture has become a particular case in point. The effectiveness of the existing channels of communication between agricultural scientists and producers has been called into question (Thornley, 1990). Many farmers feel disenfranchised from the agricultural research process and have been left with no avenue to effectively communicate research needs important to them.

Therefore, some researchers have called for a new model for agricultural research and education based on partnership with producers (Chambers et al., 1989). The participatory research model values both farmer and scientific ways of "knowing," effectively integrating them to generate new knowledge for wiser production and management decisions.

Harwood (1979) describes participatory research with farmers as a method in which "the major emphasis is on

production research, planned and carried out by and with the farmers on their own fields." In such a model, farmers are active participants at every stage of the research process, therefore having a direct impact on researchers and their research programs. In addition, Daniel Selener in his book *Participatory Action Research and Social Changes* (1997) asserts that participatory research is "a more scientific method in that community participation in the research process facilitates a more accurate and authentic analysis of social reality."

There are seven characteristics of farmer participatory research. It should be:

1. guided by the main goal of developing appropriate agricultural technology to meet the production needs of the small, resource-poor farmer,
2. characterized by farmers actively participating at every stage of the research process,
3. conducted in farmers' fields,
4. characterized by researchers serving in the role of investigator, colleague, and advisor,
5. approached from a systems perspective,
6. characterized by interdisciplinary collaboration between researchers and farmers, and
7. flexible and accepting of innovative methodologies.

The participatory model for research has been in operation successfully in Denmark and the Netherlands for several years (Sclove, 1996). There, groups can go to one of the numerous "science shops" - university-based community centers - and be connected with university researchers who assist them in conducting research designed to provide specific knowledge upon which the inquiring group can act. This marriage of lay-people and researcher provides a successful model for relevant and responsive university service to the community.

At the same time, it enhances the generation of knowledge in ways that would be impossible without the involvement of those who have a practical need for the knowledge and the real-world perspective to guide the discovery process for efficient utility. In the participatory model, research is not done for its own sake or to provide fodder for journal publications. Research is conducted to accomplish clearly defined objectives designed to solve real-world problems.

Closer to home are examples of participatory research being applied to U.S. agriculture. In western Oregon, a group of seven vegetable farmers working with university researchers evaluated an alternative strip-tillage system. The group established side-by-side trials - strip-till

versus "grower tillage" - on their fields each year for three years. Farmers used their own equipment to harvest the vegetable crops, and a processing company assessed yield and quality. From nine paired comparisons in sweet corn, researchers found a 78 percent probability of increasing net profit by \$75 an acre and a 22 percent probability of losing \$30 an acre using the strip-till system, compared to the standard grower tillage systems. Growers and researchers then looked at the yield response on individual fields to evaluate cultural factors that explain the results.

As happens many times, the collaborative evaluation lead to more questions for the group to research. After testing one strip-till machine design for three years, the Oregon vegetable growers pooled their resources and received a SARE grant to build a faster and more efficient strip-till machine to use in ongoing trials. Subsequent experiments will test the growers' new hypotheses. The power of participatory research comes from combining the creativity, experience, and resources of many people to address a common problem.

Another example is the Illinois Soil Quality Initiative (ISQI), the chief objective of which is to "identify and develop measures of biological, physical, and chemical characteristics of soils that are meaningful to farmers and other soil resource users (Walter et al., 1997)." ISQI activities were structured to involve scientists and farmers in developing a research agenda that increases their understanding of agriculture's influence on soil quality.

A board was formed of farmers, farm managers, scientists, environmental organizations, and conservation professionals to give broad direction to ISQI's research agenda. Thirty-five farmer participants volunteered their fields and also contributed to data gathering and interpretation as well as ideas for potential uses for the results. A core group of scientists and technicians gathered, analyzed, and reported data to the board, participating farmers, other researchers, and the public. Communication among all participants occurred via farmer interviews, meetings, and a periodic newsletter. The process was continually adjusted based on feedback from participants. ISQI appears to be a promising model for collaboration between farmers and researchers.

In conclusion, farmer innovations can and should be integrated into the research stream. Both farmers and researchers stand to benefit from a participatory approach to agricultural research. Though not widely practiced, many examples of successful participatory research do exist.

BIBLIOGRAPHY

- Bullock, Donald. 1992. Personal Communication.
- Chambers, R., A. Pacey, and L.A. Thrupp (eds). 1989. *Farmer First: Farmer Innovation and Agricultural Research*. Intermediate Technology Publications, London, England.
- Harwood, R.R. 1979. Research in small farm development. In *Small Farm Development*. Westview Press: Boulder, CO, pp. 32-41.
- National Academy Press. 1996. *Colleges of Agriculture at the Land-Grant Universities: Public Service and Public Policy*. Final report of the National Research Council Board on Agriculture's Committee on the Future of Land-Grant Colleges of Agriculture.
- Sclove, R.E. 1996. STS on Other Planets. *The Journal of the European Association for the Study of Science and Technology*. Vol. 15, No. 2 (June 1996), pp. 3-7.
- Selener, Daniel. 1997. *Participatory Action Research and Social Change*. The Cornell Participatory Action Research Network. Cornell University, Ithaca, NY.
- Thornley, K. 1990. Involving Farmers in Agricultural Research: A Farmer's Perspective. *Amer. J. Alternative Agric.* 5:174-77.
- Walter, Gerry, Michelle Wander, and Germán Bollero. 1997. A Farmer-Centered Approach to Developing Information for Soil Resource Management: The Illinois Soil Quality Initiative. *Amer. J. of Alternative Agric.* 12:64-72.

On-Farm Research:

Lessons from the USDA-Sustainable Agriculture Research and Education Program (SARE)

Jill S. Auburn

SARE Director

USDA-Cooperative State Research,
Education, and Extension Service
Washington, DC

The Sustainable Agriculture Research and Education (SARE) program is a 12-year-old program of USDA's Cooperative State Research, Education, and Extension Service that is designed to increase knowledge about - and help farmers and ranchers adopt - practices that are profitable, environmentally sound, and socially responsible. To advance such knowledge nationwide, SARE administers competitive grants, first funded by Congress in 1988, through four regional programs hosted by land-grant universities. Involvement of farmers, ranchers, and other stakeholders - in funded projects, and in the administrative councils that guide and oversee the regional grants programs - is integral to the SARE approach.

From 12 years of experience, there are two major conclusions to be drawn. First, doing research "on-farm" is not enough. We know that projects that take place on-farm, with farm-scale equipment and management, are often considered more relevant and believable by farmers than are projects that take place in small plots at experiment stations or in laboratories. But a project that takes place on-farm with a farmer in the typical "cooperator" role - where he or she provides the land for the experiment but is not very involved in the project design or analysis - is missing much of the benefit of a more participatory approach to on-farm research.

Participatory on-farm research - with farmer involvement in every step of the process from problem identification, to experiment lay-out, to data collection and interpretation - improves the research dramatically, since the farmer can influence it to be a more realistic test and more likely to fit into the farming system.

The farmer can also serve as the best communicator of findings to other farmers. Many surveys have shown that farmers prefer to get information from other farmers. For these and other reasons, SARE has moved from simply requiring farmer participation in researcher-led projects to also funding farmers directly to conduct their own on-farm research and share the results with their

neighbors.

The second major lesson we have learned is that doing farmer-led, on-farm research is not always easy. The extra time involved in conducting research is in addition to the heavy time demands of operating the farm. And farmers (with many notable exceptions) are often not well versed in topics such as experimental design and data collection and analysis. Thus, the best on-farm research is generally conducted by farmer/researcher teams, or by farmers with access to technical assistance from university, government, or private consultants. Private non-governmental organizations, such as Practical Farmers of Iowa and AERO in Montana, often play a key role in facilitating such partnerships and in fostering farmer-to-farmer networking.

Two resources are available from SARE to assist with on-farm research. First, we have a free 12-page bulletin, "How to Conduct Research on Your Farm or Ranch," produced by SARE's national outreach arm, the Sustainable Agriculture Network. The bulletin describes key considerations and gives examples of research with crops and animals, and with other topics such as marketing. It also lists books, bulletins, and organizations to consult for more information. It is available on the World Wide Web at <http://www.sare.org/san/htdocs/pubs/> or by contacting the SARE office at 202-720-5203.

The other resource from SARE is our grants, which are available through a competitive process in each of our four regions:

- Our research and education grants target holistic, interdisciplinary, collaborative research and education involving farmers and ranchers as integral members of the team.
- Our professional development program grants - for projects that offer educational opportunities to Extension, Natural Resources Conservation Service, and other agricultural professionals - encourage involvement of farmers as teachers, and co-learning between farmers and other professionals.

Meeting Challenges in a Developing Vegetable Production Area

V. M. Russo

South Central Agricultural Research Laboratory
Lane, Oklahoma

Scientists first began work at the USDA, ARS, South Central Agricultural Research Laboratory, at Lane, Oklahoma, in 1986. Oklahoma State University's Wes Watkins Agricultural and Extension Center is also located at this site. The facility is collectively referred to as the Lane Ag Center.

Personnel at the Lane Ag Center work individually and cooperatively in programs to develop alternative agricultural systems for the Southern Plains, which includes Arkansas, New Mexico, Oklahoma, and Texas. The majority of the work at the Lane Ag Center deals with vegetable crops, with a large portion of it being devoted to cucurbits, primarily watermelon.

There are large, established vegetable production areas in south central and south Texas. However, the predominant agricultural base when the laboratory was established centered on cow-calf cattle operations. This, to a large degree, is still the case today. Some row crops, including peanut, are grown in the region, but federally subsidized farm supports for peanut are being reduced.

There are also expanding urban centers in the region. On one hand, growth of urban areas reduces the amount of arable land available to agriculture. But it also provides opportunities for producers who are willing to shift their operations in whole or in part to crops that can be used in fresh markets and as lightly processed forms to satisfy appetites of city dwellers. Producers in the area are presented with challenges and opportunities due to the changing agricultural environment and consumer tastes, and they may require continuing education to initiate new enterprises. Currently the message from the Lane Center is that producers should consider diversifying their operations - and devoting a portion of the farm products to alternatives in to the existing agriculture systems.

In developed vegetable production areas, research is often directed to better understand problems that arise in an existing industry. In those areas the on-farm research is often dictated by requirements of producer organiza-

tions. The mission of the Lane Center is to anticipate problems while developing production systems suitable for the region. The majority of the research, and the direction it will take, is currently defined by Lane Center personnel with client input.

All the alternative crops undergoing examination at the center have specific requirements to maximize yield quantity, quality, and nutrient content. For vegetables, it is necessary for producers to understand the importance of proper field preparation and maintenance, irrigation, fertilizer requirements, harvesting frequency and timing, and pest management.

It is important to transfer the information and technology developed on the center to those who can put it to use. This requires cooperation between research and extension personnel and producers. At all levels it is important that those involved remember that at least some of the participants of the projects are undergoing a learning process.

There are many ways to deliver to the end user information developed from research. The Internet has expanded the possibilities for information distribution. A Web site devoted to vegetable production systems is a component of the parent Web site that serves the Lane Center. In many cases information concerning farming enterprises in a county spreads more quickly at the coffee shop than over any formal delivery system. The development of data and the delivery of information need to be taken to the field if the information is going to be used by producers. First contact between the scientist and the producer interested in doing on-farm research is normally through the county Extension agent.

The successful completion of on-farm research can be complicated by what the scientist is trying to accomplish. Treatments on producer fields can include everything from the relatively simple design needed for cultivar trials, to more involved designs that test one or more variables. Research, by definition, requires that data be developed from a replicated experiment testing effects of a treatment that is compared to an untreated control, by

means of a reproducible design.

Conducting research on a producer's field that is designed to refine, or develop, a production system can create frustration. Installing a replicated experiment on a portion of the field may create logistical problems. If a producer is considering altering his/her operation, he/she wants to see something that works. Even when an on-farm project is undertaken with the best of intentions, problems can develop on both sides. How these problems are handled will define the level of, and incentive for, cooperation in subsequent years.

An Application of Systems Engineering for Small Potato Production

William M. Clapham

Appalachian Farming Systems Research Center,
USDA-ARS, Beaver, West Virginia

Systems engineering was used to develop a protocol for producing gourmet small red potatoes. Several characteristics led to rapid development and delivery of this technology:

- The end user was a vital member of the research team from start to finish.
- A specification for the end product was developed.
- A narrow niche market was targeted.
- The production system was configured in the laboratory prior to field testing.

The goal was to reduce tuber size distribution by increasing potato seed population. Other costly inputs were reduced or eliminated. N fertilizer use was reduced from the conventional 160 lbs./acre at planting to 40 lbs. N at planting and 4 lbs. maintenance foliar N/week. Because the potatoes were vine-killed after 64 days, exposure to late blight and associated costs and risks were virtually eliminated. The enterprise budget for producing small red potatoes was about \$750/acre, yielded 180 cwt./acre, and was valued at \$40/cwt. The enterprise budget for conventional round white potatoes was \$1,800/acre, yielded about 250 cwt./acre, and was valued at \$8.75/cwt. Growers were contracted to produce small red potatoes in the third year of the project.

The Maine potato industry targets three markets for its crop: processing, round whites, and seed potatoes. Processing potatoes are often contracted for potato chips or french fries, round white potatoes are sold in bags for supermarkets, and seed potatoes are sold to growers throughout the East Coast. In the past 30 years potato acreage dropped from about 158,000 to 66,000 acres, reducing Maine's impact on the commodity market.

Many factors drove this decline, but demand for Russet Burbank as fresh stock and for processing shifted major production to the West, where growing seasons are longer and water is controlled. Maine has a growing season of roughly 120 days and continues to produce high-quality potatoes for each of its three markets. Although some Maine growers successfully grow Russet Burbank, the growing season is too short, and the comparative advantage of the West is too great to compete successfully.

For many of the potato producers, the decline in

Maine market share is troubling. Production practices attempt to approach the yield potential by utilizing the maximum growing season. However, efforts to increase tuber yield of long season indeterminate potatoes can be associated with reduced tuber quality.

To maximize the growing season, tillage operations occur in the spring as soon as the soil is dry enough to plow and harrow, and potato seed (usually cut seed) is planted at the earliest possible time. Stand losses are sometimes incurred due to activities of soil-borne pathogens and weak vines due to cold wet soils. Strategies to increase yield frequently rely on increased fertility and produce large canopies that persist to time of vine killing.

In addition to regional competition, production costs are driven up by pests and disease incidence. Disease is an ever-present problem and is controlled primarily by agrochemicals and/or crop rotation. The number of crops that are rotated with potatoes in Maine is limited by the availability of "good" potato land, lack of economically significant rotation crops, and poor understanding of rotation crop benefits.

During an informal meeting, a frozen-food processor expressed interest in and identified a market for a frozen product utilizing small red potatoes. One of the problems with small red potatoes is supply. Small potatoes are generally graded as "creamers," the smallest size class from a harvest. The processor approached ARS to develop a management system to produce a red potato to their specification: 1 1/2 - 2 1/4 in. diameter, deep red color, delivered by the second week of August.

To stay within the research criteria of our location, the system needed to: 1) reduce N and pesticide use; and 2) increase opportunities for increasing crop rotation. A system was developed in the laboratory (prior to field experimentation) based upon knowledge (not information) about potato morphology, population dynamics, varietal characteristics, and fertilizer-use efficiency. This system was configured using systems engineering techniques. Some aspects of the project that were important are:

- A specific product and potential markets were specified with industry personnel.
- Small potatoes are a niche product. Their mar

- ket, however narrow, could be "global."
- Various alternatives for production could be identified.
- Alternatives provided a means for reaching research goals.

Preliminary data showed that growing small determinate potatoes took about 64 days from planting to vine kill. Whole seed was sown at a 10 cm. spacing during the 3rd week in May (about 2 weeks after conventional practice) to take advantage of warmer soils. The seed was planted with 40 lbs. N/acre. Canopies were maintained with 4 lbs. foliar N/ week beginning with vine emergence and coinciding with prophylactic fungicide application. Tuber size was monitored on a weekly basis, and daily as they approached target size. When tuber size reached the target, plants were vine-killed, and tubers were dug two weeks later, washed, and graded.

Mean tuber yield was 180 cwt./acre; 42% of the tubers were between 1 1/2 and 1 7/8 in.; 25% were between 1 7/8 and 2 in.; and 25% were between 2 and 2 1/4 in. in diameter. Since the tubers were dug in early August, sufficient growing season remained to produce a cover crop. In comparison to conventional round white tuber production, fertilizer and pesticide use were reduced by more than 60%. The enterprise budget was about \$750 for small red potatoes and \$1,800/acre for round whites. Wholesale values for small red potatoes were \$40 and \$8.75/cwt for round whites, and net returns for small red potatoes acre were \$6,450/acre and \$388 for round whites.

In the third year of the project the food processor contracted local potato producers to grow small red potatoes using our management protocol. The growers accepted the contract with the willingness to follow production guidelines. Despite variation in field scale tuber yield, results were consistent with our experience. Potatoes were delivered to the processor in early August and the potatoes found their way into frozen gourmet diet meals soon after.

Niche products offer small farmers opportunity. The commodity market often overlooks marginal products. Profit margins can be very attractive, and radical changes in production practices are easier to implement because attention is focused on producing a specific product. Narrow market-based products often require development of management practices to meet product specifications.

This project used systems engineering as a tool for developing a management system to meet product goals. One of the factors essential for success was that the processor (end user) was part of the development team.

System development did not require expending resources on a lot of new empirical studies, but instead required synthesizing knowledge already available in the literature. This case study demonstrates an alternative model for agricultural research that can positively impact small farm livelihood and development of new small farm enterprises.

Diversifying With New or Alternative Crops

Robert L. Myers

Thomas Jefferson Agricultural Institute
Columbia, Missouri

At one point in time, every crop grown in almost every region of the world was a new crop to that region. Corn was new to Europeans, and wheat was new to the Americas. Soybeans, from China, were considered an unimportant alternative for decades in the U.S., until their acreage started to increase in the 1930s and 1940s. In more recent decades, sorghum and sunflowers have gained substantial acreage in the U.S., and they are now considered commodity crops in some parts of the country. Ironically, sunflowers are the only major grain or oilseed crop that is native to the U.S. yet were never accepted here as a crop until much plant breeding was done to improve them over a several decade period in Russia. Canola has been a significant crop known as rapeseed for centuries in Europe, yet it only became important in North America after the Canadians made a major government-supported effort to develop it. Clearly, farmers in many times and many regions have benefited by adopting new or alternative crops.

One thing that is different about agriculture as practiced in the U.S. today, as opposed to agriculture in most times and places, is the lack of crop diversity. So many U.S. farms grow only one or two crops, especially throughout the corn, wheat, and cotton belts. There are many factors that have contributed to this lack of diversity, including government policy, recent research priorities, market dynamics, and mechanization.

Successful introduction of new or alternative crops into a region depends on several factors, but it can be assisted by appropriate on-farm research. Some of the key things to test in on-farm trials are variety comparisons and planting and harvesting methods. Since many alternative crops differ in seed size from commodities and have different germination and maturation patterns than commodity crops, equipment adjustments or modification need to be evaluated. It is much better to have a planting failure or inefficient harvest when only an acre or so in a trial plot is affected, rather than in a 40- or an 80-acre field.

Evaluating alternative crops in on-farm trials also allows a producer to gain important familiarity with the growth

habit and pests of the crop before committing to a larger acreage. For example, learning about timing needs on weed control can help balance labor demands when the new crop is fit into the existing rotation.

ALTERNATIVE CROPS TO CHOOSE FROM

There are a number of alternative crops that have potential to return a reasonable profit in appropriate regions of the country. Some of the oilseeds, legumes, and grains to consider are outlined below. A good source of further information is the Purdue new crop website (www.hort.purdue.edu/newcrop/), or my office, the Jefferson Institute (phone 573-449-3518). One source of funds to help with cost of testing an alternative crop in on-farm research is the SARE producer grant program (phone 202-720-5203, or visit the SARE website, www.sare.org, for more information).

ALTERNATIVE OILSEEDS

Of the alternative seed-harvested crops available, the type experiencing the most growth in acreage is the alternative oilseeds. The world oilseed market continues to expand, especially as plant-derived oils begin to replace petroleum-derived products. Canola and sunflowers are alternative oilseeds adapted to many areas of the U.S. that have seen expanding acreage. Although the primary marketplace for canola and sunflower is the edible oilseed market, for cooking oil or processed foods, these crops also are being used for a variety of non-food purposes as well. Canola with a high level of crucic acid in the seed is called industrial rapeseed and has a variety of uses, including as a slippage agent to keep plastics like bread wrappers from sticking together.

Flax and sesame are "old" oilseeds that are viable alternatives for many regions of the U.S. Flax is high in omega-3 fatty acids, which are believed to help reduce cholesterol. Sesame is a crop that is mostly imported, even though it can be grown very well domestically - Thomas Jefferson noted the potential of sesame in his own test plots 200 years ago. Most alternative oilseeds are high in oil content, typically 40% or more of the seed weight, compared to about 20% oil in soybean seeds. Plant-produced oils provide a more renewable

source of material than petroleum, and they are often friendlier products to the environment by being biodegradable or less polluting.

Other examples of alternative oilseeds include crambe, meadowfoam, and safflower. Crambe is a non-edible oilseed grown for its high content of erucic acid in the seed, a material that can be used for a variety of industrial products such as slippage agents in plastics or engine lubricants. Meadowfoam is being grown in Oregon as a high value oilseed used in cosmetics, with potential for other unique uses. Safflower is an edible oilseed grown in arid regions of the West for use as a cooking oil and for birdseed mixes.

ALTERNATIVE LEGUMES

As part of a crop rotation, legumes can reduce or sometimes eliminate the need for nitrogen fertilizer (organic or conventional) applications. There are a number of domesticated or native legumes that have gained acceptance as forage crops or ground covers, but soybeans represent the only widely grown legume grain-type crop. After soybeans, cowpeas and dry edible beans have been the most economically important large-seeded legumes (pulses) in the U.S.

Legumes in general can be broken into two groups - cool season legumes, needing to be planted in early spring or as a winter annual, and warm season legumes, which can be planted later and are more suited to Southern regions. It is very important to find varieties adapted to the area of production with legumes, in part because they are somewhat more likely than other crop groups to experience disease pressure or other production risks when grown in a new area.

Besides soil fertility benefits, the chief advantages of pulse legumes is the large seed, making them easy to handle, and the typically high prices per pound relative to cereal grains. The main market for most pulse crops is as human food, although some are fed to livestock as a high protein source. All legumes, including pulses, are higher in seed protein than other types of crops.

Dry edible beans, which include several market classes such as pinto, navy, red, kidney, and black beans, are grown in several regions of the U.S. These beans are shorter in both stature and growing season than soybeans and bring a much higher price per pound. However, compared to soybeans, dry beans are harder to harvest, are more susceptible to pests, are lower yielding, and require more effort in post-harvest handling and marketing.

Cowpeas, or black-eyed peas, are Southern legumes that also have a variety of market classes. Some types of cowpeas are viney, and some are short and bushy. Cowpeas are also shorter season than soybeans but more difficult to harvest. Some buyers require cowpeas to be delivered at relatively high moisture within a day of harvest, while others accept dry cowpeas.

Alternative legumes grown in the Pacific Northwest include chickpeas (garbanzo beans) and lentils. These legumes go into the edible marketplace, and they work well in rotation with small grains in that region. Sweet white lupine is a cool season legume grown in some northern states that has unusually high protein levels of 38 to 40%. The primary market for the crop to date has been as a high-protein animal feed, particularly for dairy cows.

Mung beans are a significant alternative crop in Oklahoma and are suited to other parts of the South and Midwest, especially where moisture stress occurs. Mung beans are used for soup mixes and bean sprouts and are sometimes sold fresh or canned. Adzuki beans are related to mung beans and have export potential to Japan, where they are used for a variety of confectionery food products. Guar is another southern legume, grown some in Texas but largely imported for use as an ingredient in processed foods.

ALTERNATIVE CEREAL GRAINS

All of the most promising alternative cereal grains are crops that were domesticated for food use in some part of the world, usually thousands of years ago. Despite their value for human food use, many grains are grown primarily for animal feed, including corn and sorghum. Many of the alternative grains that have been tested or grown in the U.S. have started out being considered as livestock feed, and a few also hold potential for marketing as birdseed. The birdseed market consumes tens of thousands of acres of cereal grains such as sorghum and proso millet; notably, other alternative cereal grains, such as foxtail millet and pearl millet, have good potential for commercial birdseed market.

There is also a group of alternative crops called pseudocereals that are like cereal grains in that they are ground into flour for food use but are different in that they are not grasses. Amaranth, quinoa, and buckwheat are all pseudocereals that are actually broadleaf plants that do not fit into the oilseed or legume categories. Of these three, buckwheat is found on the largest acreage in the U.S., with a strong export market to Japan for use in noodles and other products.

Amaranth and quinoa are crops that were grown by the Aztecs and Incans, respectively, and have gained renewed interest due to their relatively nutritious grain characteristics. Quinoa is more adapted to cool mountain climates, such as intermountain valleys of the West. Amaranth is adapted to most parts of the U.S. and has been grown commercially for the health food market, for products such as breakfast cereals, crackers, or baking flour.

SUMMARY

A number of alternative grains, oilseeds, and legumes have potential for being grown on U.S. farms. Some of these crops can replace imports, while others can be grown for export. Most have a variety of potential uses in the U.S., and all of these crops can help diversify existing crop rotations, allowing for reduced pest pressures and potentially increased profits. Successful adoption of alternative crops often starts with on-farm research that can identify the appropriate variety for a growing region and determine the best equipment settings or modifications for existing farm equipment. Many barriers exist to diversification, including government policies, but the potential benefits of new crops are well worth the investment necessary to bring about increased diversity.

BIOS, BIFS, BASIS-OASIS:

Acronyms for Success

in Agricultural Research Partnerships

C. T. Bull

USDA-Agricultural Research Service
Salinas, California

Although agriculture is one of our most important industries nationwide, only a small fraction of our nation's research budget is directed to maintaining our leadership in this industry. Research on organic farming systems receives a disproportionately small fraction of that budget. Low research budgets have necessitated that groups work together to maximize the impact of research dollars received.

In California, representatives from the farming community, non-governmental organizations, state and federal agencies, and industry have worked together to provide research that is pertinent to producers. These models will be very important for insuring that research conducted to address the needs of organic farmers has its maximum impact.

The objective of this presentation is to describe the BIOS (Biologically Integrated Orchard Systems Management) and BIFS (Biologically Integrated Farming Systems) models for agricultural research. The BASIS-OASIS (Biological Agricultural Systems in Strawberries-Organic Agricultural Systems in Strawberries) program will be used to demonstrate how partnerships among all stakeholders maximize the impact of the research conducted.

Organic production is a growing sector of the agricultural economy in the United States. More than 1% of all U.S. food and fiber is now grown using organic production systems. This sector has grown by at least 20% annually for the past 9 years. Projections indicate that this trend is likely to continue. A snapshot of the U.S. organic industry's growth can be seen in the trends that are occurring in the central coast region of California, where organic farming has grown continually over the past 10 years.

In Monterey County alone, the value of organically grown products reached \$46 million in 1998. Likewise, the number of certified organic growers in the county jumped from 25 in 1994 to 69 in 1998, and the number of acres in organic production jumped from 600 to 4,712

acres. Organic production has been increasing at a rate of 25% or more per year and increased by 43% in 1998 (Lauritzen, 1998).

As the organic industry and the economic clout it represents increase, the need and demand for research on organic production systems will increase. This need will be one of many that compete for funds from an already restricted agricultural research budget. In 1997 it was reported that only one tenth of one percent of the national research budget was being devoted to organic production (Lipson, 1997), while at that time the organic industry represented 1% of agricultural production.

Even if organic research begins to receive funding at a level proportional to its significance, research dollars will be a limiting factor. Low research budgets on the state and federal level have compelled research institutions and outreach groups to work together to maximize the impact of research dollars. Because of the restrictive funding situation, partnerships in research on organic systems will be even more important.

In California, partnerships have developed among a diverse group of farmers, research institutes, and non-governmental agencies to reduce pesticide use. These groups have worked as equal partners to provide research that is pertinent to producers. These models for partnerships and participatory research will be very important for insuring that research conducted to address the needs of organic farmers has its maximum impact. Although several models have been developed, the essential element of all of these models is their emphasis on partnerships with farmers.

One of the largest stumbling blocks in the ability of the scientists to benefit from the first-hand knowledge of the farmers is the dissimilarity in the language of farmers and scientists (Fry, 1999). Information that farmers have acquired through trial and error over thousands of days in their fields is devalued by scientists because the farmers are not using the scientific terminology that the scientists esteem (Fry, 1999). Technical research can be

advanced when scientists take the time to understand what a farmer is seeing and describing (Fry, 1999).

The research models developed in California have tried to eliminate elitist attitudes by having farmers and scientists work as equal partners in research. Their ideal is to foster a "co-learning" environment, with farmers and scientists interacting as equals in the entire research process.

BIOS (Biologically Integrated Orchard Systems) was established in 1993 by the Community Alliance with Family Farmers, a non-governmental agency in California. Through this model, growers are encouraged to act as mentors to other growers by demonstrating whole-systems approaches to orchard management. Growers are provided technical assistance and access to on-farm research. The program has included farmers, a wide array of other crop production specialists, and scientists from state and federal agencies.

The goals of this program are to:

- facilitate the exchange of information based on the knowledge and experience of the farmers, PCAs, and researchers who have pioneered and continue to develop biologically integrated orchard systems;
- create and coordinate local teams that provide leadership, program guidance, and technical assistance;
- monitor and document the effectiveness of BIOS farm management practices and the program model;
- foster collaboration and respect among farmers, agricultural service providers and suppliers, research, and public and private institutions; and
- promote the adoption of the BIOS model within public and private institutions.

A similar program, BIFS (Biologically Integrated Farming Systems), was modeled after the BIOS program and is administered by UC-Sustainable Agricultural Research and Education Program (UC-SAREP). This state-funded program is designed to identify cropping systems that are amenable to the BIOS model and to provide funding and aid to enable the programs to develop. So far nine projects have been identified and funded. Some of the projects closely follow the model developed by BIOS, while others have diverged slightly.

The goal of this program is to demonstrate and expand the use of integrated farming systems that have been proven to economically reduce the use of farm chemicals. The farmers in these projects voluntarily participate in pilot projects to reduce their use of agricultural chemicals. Their most important duty, however, is to

serve as mentors for other growers and scientists.

The BASIS-OASIS (Biological Agricultural Systems in Strawberries-Organic Agricultural Systems in Strawberries) is a new BIFS program, which began in January 1999. The cropping system that is currently in place for strawberry production in California is extremely sophisticated. Strawberry production relies on high quality certified transplants, soil fumigation with a mixture of methyl bromide and chloropicrin, an extensive pest management regime, and other labor-intensive management practices.

To develop a biological based production system for strawberry, it is essential that we take an interdisciplinary approach and involve farmers at the start. We have enlisted farmers, PCAs, plant pathologists, weed and soil scientists, entomologists, erosion control specialists, members of the strawberry commodity board, and an industry partner. Our goal is to develop a set of biological approaches for growers to use. We do not expect that this approach will yield one-for-one replacements for currently used chemicals but will provide an alternative system of plant production.

Scientists are working with farmers to develop new cultural practices, while farmer mentors are providing information about current farming practices to other farmers and scientists. In particular, our grower participants have contributed key information that will help with the success of this project. In organic systems we are testing biological approaches developed in conventional systems, including the use of microbial agents for disease control. Additionally, our industry partner is dedicated to obtaining OMRI (Organic Materials Research Institute) registrations for the biological products identified as useful.

Although these models have been very successful, funding may not be available for interdisciplinary research. Organic growers will need to be integrated into the research process in additional ways. Recently the USDA/ARS at Salinas, CA, has made a commitment to conduct organic research. We are developing a 16-acre organic research plot at our Spence Road field site to specifically address the research needs of the organic farmers in our area. The entire acreage is certified organic.

This will be the first year that research will be conducted on the certified land. To insure that the research conducted on the research site is relevant to organic growers, we have integrated organic farmers into the research

process. Our Organic Liaison Committee consists of organic farmers and crop advisors who are interested in helping to escort the program we are developing. At our first liaison committee meeting, the need for such a committee became clear. Our ideas of what information is pertinent to organic farmers did not always coincide with the farmers' ideas. Our approach to managing the organic plot changed as a result of that meeting.

In 1997 Lipson stated, "The national agricultural research system has failed to ... explore (organic production) seriously or help to improve the performance of organic farming systems." This might suggest that agricultural research has left the organic farming community behind. In my experience, the organic farming community has left the research establishment behind and has been solving their own problems. Organic production has matured and practice has surpassed theory. This has happened through organized research efforts such as those of the Organic Farming Research Foundation, which dedicates its research dollars to farmer-directed research and through on-farm development by farmers.

The information gathered by individual farmers has been exchanged through grassroots meetings such as at the Ecological Farming Conference put on by the Committee for Sustainable Agriculture or the Lighthouse Network of CAFF.

Organic farmers need to be a major component of all organic research because:

- they are the leaders and experts in this field where so little research has been conducted;
- they have already begun to answer questions pertinent to their production systems;
- they have defined organic agriculture; and
- without integral understanding of what is happening on organic farms in any region, scientists may spend years researching questions that are no longer of value to the growers.

It is rare that growers are considered partners in research programs, but it is essential that scientists seriously consider the information gathered by these experts when conducting organic research. I propose that without integrating organic farmers directly into the research process, the research establishment will be left farther behind.

Additional Information

Lauritzen, E. 1998. Monterey County Agricultural Commissioner 1998 Crop Report. Salinas, CA.

Fry, P. 1999. Wie Bauern und Bäuerinnen Bodenfruchtbarkeit sehen: Ein Vergleich mit naturwissenschaftlichen Sichtweisen. In Stern Warten-buch 2. Jahrbuch, Collegium Helveticum, ETH, Zürich.

Lipson, M. 1997. Searching for the "O-Word." Organic Farming Research Foundation. Santa Cruz, CA.

CAFF (<http://www.caff.org>)

UC-SAREP (<http://www.sarep.ucdavis.edu>)

OFRF (<http://www.ofrf.org>)

Meeting the Research Needs of Organic Farmers:

Learning from Experience

Kathleen Delate

Iowa State University

James Boes

Heartland Organic Marketing Cooperative, Greenfield, Iowa

Organic agriculture has become a major industry in the U.S. and Europe in the past 15 years. The industry has grown at a rate of 20% annually and is now a \$4.5 billion industry in the U.S. "Certified Organic" is defined as crops produced on land free from petroleum-based chemicals for at least three years. Iowa's organic acreage has increased from 22,000 in 1996 to more than 120,000 acres in 1998. Organic producers/marketers are still in a pioneer position, as institutional support (in the form of research information, markets, transportation, and distribution) lags far behind that established for conventional commodities.

In 1998, six organic agriculture focus groups were held across the state with selected farmers, Extension and researcher staff, and agricultural community leaders (from cooperatives, banks, and non-profit groups) to discuss organic research and educational needs. From these discussions came the establishment of 35 acres of organic crops/agro-ecological research and demonstration sites across Iowa. Eight organic farming field days attracted

600 people in 1999 to document the savings in economic, energy (BTUs), and environmental terms (nitrate contamination avoided; beneficial insects conserved) when organic practices are employed.

Meeting the Research Needs of Organic Farmers

Jane Sooby

Organic Farming Research Foundation
Santa Cruz, California

Because so little research has been done on organic farming systems, any research that focuses specifically on organic production should be of use to organic farmers. Less than 0.1% of USDA's research resources have gone toward explicitly organic studies (Lipson 1998).

On one hand, this is exciting news because it means that organic research is a wide-open field. On the other hand, it is discouraging news if one considers the vast amount of information on the complex interactions of biological systems that organic farmers could have but don't because very little of this work has been done.

The Organic Farming Research Foundation performed a national survey of organic farmers in 1997 that was published earlier this year (Walz 1999). Of 1,179 respondents, 62% ranked weed management as their top research priority. Because organic farmers rely on cultural methods of weed control rather than herbicide applications, many related issues need investigation - such as crop order in the rotation, timing and type of tillage, use of allelopathic cover/green manure crops, residue management, managing weed seed banks, flaming or burning, controlling weeds that reproduce vegetatively, and use of livestock to control weeds.

The relationship between fertility management and crop health, pest, and disease resistance was the second highest ranking research priority for organic farmers. This is an area that has been largely unexplored in traditional agronomic research. Soil scientists, plant pathologists, microbial ecologists, and agronomists all have expertise to contribute to this line of study. Interdisciplinary research projects ought to be considered in exploring how soil microbial interactions affect nutrient dynamics and crop resistance mechanisms.

The third highest ranking research priority for organic farmers was the relationship of organic growing practices to the nutritional value of the product. Here is another area where interdisciplinary cooperation is

required to elucidate the connection, if any, between building healthy soils and growing highly nutritious crops. This aspect of organic farming is particularly important in light of recent observations that nutrient levels in many vegetables have declined in the past 20 years, according to USDA figures (Kittredge 1999). This disturbing trend may reflect an unanticipated consequence of chemical farming and may support organic farmers' emphasis on feeding the soil rather than the plant. In any case, this matter demands further study.

Though very few USDA research dollars have gone toward organic farming research, such studies have continued on-farm, done by farmers themselves. Eighty-seven percent of the survey respondents indicated that they engage in some type of on-farm experimentation. The top three topics of on-farm experimentation are variety trials and alternative crops, cover crops and green manures, and crop rotations.

When organic farmers were asked to name a single most important area of research in their own words, whole farm planning and design/ecosystem integration/permaculture was listed as often as weed control. This indicates that organic farmers are thinking in terms of whole farm systems. Researchers must come up with useful systems research methodologies in order to work with farmers in discerning energy and nutrient flows through agroecosystems and how all elements interact. Economic analyses are also critical to help farmers assess the viability of their production decisions.

The traditional Extension model of client-provider has not served to meet organic farmers' information needs. In the OFRF survey of organic farmers, cooperative Extension advisors were ranked third to last (of 12 categories) in their usefulness as sources of production information (Walz 1999). State agriculture departments and USDA national or regional offices ranked 11th and 12th, respectively. University researchers ranked 8th, while other farmers ranked first.

Only 44% of the farmers used university researchers for production information, while 58% attempted to have their production questions answered by Extension personnel. Significantly, 83% consulted other farmers. A main objective in organic farming research should be to involve farmers in planning research projects and in extending the results to the farming community. Working with farmers to plan, carry out, and publicize research will make Extension and university researchers more responsive to organic farmers' information needs and more effective in answering their production questions.

References

Kittredge, J. 1999. "USDA reports decline in nutrients in US food." *The Natural Farmer*, spring 1999 (published by the Northeast Organic Farming Association, Barre, MA).

Lipson, M. 1998. Searching for the 'O-Word': Analyzing the USDA Current Research Information System for Pertinence to Organic Farming. Santa Cruz, CA: Organic Farming Research Foundation.

Walz, E. 1999. Final Results of the Third Biennial National Organic Farmers' Survey. Santa Cruz, CA: Organic Farming Research Foundation.

A New Agriculture for the New Millennium

Desmond Jolly

Vice-Chair, National Commission on Small Farms

Keynote Speech

Approaching the New Millennium in America means honoring the past and embracing the future. We must recognize the diversity of farms in America and the diversity of contributions made to agriculture. Secretary of Agriculture Dan Glickman recently renamed the biggest new research building on the USDA Beltsville, Maryland campus the George Washington Carver Building in celebration of Dr. George Washington Carver's life. This African-American scientist was close to the land. He listened to the plants and learned from them. He had sympathy for the flowers.

Look around at your small farm neighbors. If you know a family who has lived on and farmed on the land for a century, making at least \$1,000 in income from on-farm production, the USDA is now counting and celebrating these Century Farms. Having a farm in the family for a century or more comes with a lot of hard work. USDA wants to compile a list of them.

Two prominent African Americans inspired me as I grew up. Booker T. Washington, who built the educational institution Tuskegee University, was one. He applied science to the rejuvenation of farms. George Washington Carver was the other who inspired me. To have George Washington Carver's name on a prominent USDA research building is especially appropriate on the eve of the New Millennium. Carver is a metaphor as USDA embraces the contribution of all known and unsung contributors to the American agricultural enterprise. George Washington Carver is a metaphor for all those unsung thousands of heroes who have contributed to American agriculture in our century.

We have strayed from the moral philosophy that founded this nation. We have modeled agricultural economics after the field of physics as if laws of economics are unchangeable laws. Because of this misconception, we have lost control as human beings.

A remarkable diversity of competence from America's small farmers and ranchers shows me that America has the ability to reinvigorate our democracy. It will take the coordinated efforts of many - not only farmers and

ranchers, but representatives from federal, state, and local governments, state land-grant universities and colleges, and community-based organizations - to make this happen. That is what this conference is about.

This conference is happening through the determination, the energy, the vision, and the hard work of Denis Ebodaghe, USDA/CSREES National Program Leader for Small Farms. Throughout the last year I talked on many occasions day and night to Denis. Many times when I had to call him back late at night, he told me to call him at his office. Sometimes he spent the night there. I was flabbergasted by that kind of dedication!

Today, as this conference of 700 people is a reality, the fellowship, networking, and energy happening here are incredible!

We must recognize here and it is rewarding to see - with such enormous potential within the small farm and ranch community - that we must celebrate, learn about, and rededicate ourselves to the great pillar of democracy on which this nation was founded. It gives me great joy to contemplate the potential that can trickle down to all aspects of the American economy from just that one act.

You are here by virtue of Denis Ebodaghe. He networked with a lot of USDA agencies and people in Missouri to make this conference an accomplished fact. I have seen the fruits of his quiet, self-effacing work. Denis Ebodaghe is a quiet, humble man. He works behind the scenes and he is totally supportive of what we are trying to do for small farmers and ranchers in this conference. He is very persistent. He is trying to empower us. In 1996, the first National Small Farm Conference was an outcome of Denis' vision. He told me that for this - the 2nd Conference - he wanted to bring in community-based organizations. The next one, he said, "We bring in farmers." We are here by virtue of Denis' hard work and he would be the first to say that the conference is happening because of many people's hard work.

It is appropriate that we consider what a sustainable

society is on the eve of the Millennium. We must revisit the values of the Founding Fathers. A bill of rights, a constitution, and a democratic form of government are all pillars of a sustainable society. Is it still definable that the notion of sustainability is consistent with small farms and ranches?

Thomas Jefferson envisioned a democracy as grounded on the foundation of small farms. This seems paradoxical, as he lived as landed gentry. He had slaves. This was a contradiction of the ideals he envisioned in a democracy as he lived off his slaves' work. He knew that the system was not sustainable. He agonized in America from this anti-democratic institution - slavery - which he knew was not consistent with democratic ideals, for some residents in America - slaves and others - were disenfranchised. He withheld, in addition to the Constitution and the Bill of Rights, the notion of small family farms and ranches and that these were needed in this country in order to reinvigorate democracy.

For a democracy to function, farmers and ranchers needed to have the right of ownership of their land. The small family farm would give them the kind of freedom that would give them an economic franchise. Education was needed. The existence of slavery in America was a contradiction to the nation's basic articulated values. Yet while Jefferson lived a life in contradiction to the truth, he understood and articulated that this economic franchise - this freedom to own and farm land - was the underpinning of the Homestead Act. This Act allowed 160 acres to be allotted to families for farming. The Jeffersonian notion of democracy founded the Morrill Act, bringing science to the sons and daughters of the Revolution through the land-grant university system. Jeffersonian policy informed the Smith-Lever Act where the fruits of technology and science could assist the average family farm through the Extension Service.

What have we discovered that would overcome our democratic franchise? Economy of scale. The Republic If You Can Keep It was a treatise he authored. A Democracy If You Can Defend It, another treatise of his, examined the sustainability of a democracy. Within the Jeffersonian notion of society is the franchise still defensible? How do you allow people to have a franchise?

We are worried about the loss of the family farm franchise. And we are worried about loss of other franchises that have been the key of a democratic America. Today the St. Louis newspaper headlines address the loss of accreditation for St. Louis City schools. We need to look more broadly on how people systematically lose their educational opportunity so they can earn a decent

living. This is disenfranchising people.

There is a logic I see undermining our democracy that revolves around two key factors. I intend to analyze how these factors that undermine our democracy play out in our country. They revolve around risk and debt. A dialectic means an inherent contradiction. The solution often becomes the problem when you think deeply about a problem. Risk is one of the problems in our modern society. This is one of our riskiest periods in our American history. This belies the folk wisdom we hear on television - that economic indicators look good and that our economy is robust.

I, Desmond Jolly, a trained economist, am telling you that I risk my professional reputation to tell you that the technology that drives the political, financial, and economic arenas in this country is behind the loss of many of our franchises - economic, political, and financial - and the demise of the small family farm and ranch in America.

New developments in technology can undermine the security of a business firm. While technology creates new opportunities, it causes a threat to a firm producing a certain line of products. Technological change can cause firms to adopt this new technology with many chain reactions stemming from incorporating that new technology.

Financial risks are another key problem in today's world. There are unprecedented pools of capital located strategically around the world. Some of these pools are accumulated through traditional means. Some come from the underground illegal drug trade. These pools can be mobilized quickly against a company, a currency, or a government. These pools of mobile capital threaten to do strategic things. This kind of capability poses threats to our democratic, economic, and financial franchises.

Policy developments can impose unforeseen threats on stockholders of companies. They can upset the whole paradigm under which a company operates - witness tobacco company lawsuits today. New policies posed a threat to the bottom line of tobacco companies. Consumer behavior can be manipulated, and this constitutes the fourth source of risk. Our per-capita consumption of beef is going down. Consider what this means to beef producers. We have a risk-laden society.

Consolidations of large companies to control more and more of a product pose great threats to our economic independence. Consider the latest merger of MCI and Sprint. One of the key ways to annihilate the competi-

tion is to simply remove it. The fewer players in the game, the less energy it takes to monitor the game. If you have only one player, controlling and monitoring any future competition becomes easy. Mergers can get big enough to compete against any competition. All firms that produce a particular product can merge and create one company. Three or four airline companies just raised leisure airfares by 17%. These mergers and acquisitions are not just happening in telecommunications. It has to do with playing a defensive alliance against technology. So we can gradually extract the maximum value in selling a product to cover costs of mergers in the marketplace. The most prevalent practice to deal with policy is to take over the competition. You can purchase a government or a government representative. Does this diminish political franchise?

What is gridlock? They purchase both sides. You have a checkmate. It benefits the status quo so no policy threatens the bottom line. At whose expense? Yours. When the status quo is ensured, capacity is protected.

You now have business firms as powerful as a government. What I see us moving into next is what I call a corporate state.

We are unhappy with our dysfunctional state. Will a corporate state invest as much in a people and the environment? Will it care enough to extend the franchise of democracy to us? Corporate debt is unimaginably large. It poses another threat to the corporate world.

Stockholder values go down. How do companies manage that debt - that decline in customer spending? Customers must be coerced to spend more so that companies can service the debt. Consumers are pressured to take on more and more debt. Debt is incredibly high in America.

Debt is at all-time frighteningly high levels. The Secretary of the Federal Reserve Bank, Alan Greenspan, exudes a kind of confidence. But Greenspan is nervous. This has been called the bubble economy in America - pressuring consumers to spend more and more. Information about consumer spending habits is used by marketers to manage consumer risk, so technology is being refined to trap people's decisions, profile their households, and target their spending habits. Risk and debt are driving and undermining our democracy by the structuring corporations take to manage risk. They jeopardize their own security but also that of the larger democracy.

The same thing has happened in agriculture. Consider the effects of the company Monsanto and biotechnology.

They are in so much debt that they must ensure farmers come back to buy from them, so they came up with the terminator to storehouse seeds. This franchise hooks farmers into biotechnology firms. The company tries to undermine decision making of farmers. By degrees, farmer's decision making has been reduced. Our ability to make informed judgments about our policies in a democracy has thereby been undermined.

Today at the 2nd National Small Farm Conference, I visited two family farms and a winery during the tours. It was a very high experience. Getting to be on a farm that has been in a family since 1840 - six generations - and being driven on a tractor by a gentleman in his 60's while he enthusiastically talked about the agricultural innovations he has used on his 100 acres, how he ships 10,000 boxes of apple butter a year, were wonderful. Seeing this successful picture of a thriving family farm was a high for me!

Farms have different possibilities due to location, assets, skill of the people running them, and economic factors. It reaffirms to me the notion that Thomas Jefferson brought to us - the notion of the family farm as a bulwark of democracy. This reaffirms my faith in the need for strong family farms to continue to thrive in America. I will go further in my own work - and I hope all of you in the audience will also make this pledge - to support family farms as an institution not of the past, but also a very viable part of the future.

Evaluating Small Farm Programming in North Carolina

John M. O'Sullivan

North Carolina A&TSU
Greensboro, North Carolina

Introduction

Over the past 25 years, the Small Farm Program in the Cooperative Extension Program at NCA&TSU has experienced an evolution of its small farm evaluation process. The Farm Opportunities Program existed from 1972 until 1995 in terms of data collection. During that time, the focus of program evaluation was toward monitoring demographic data about program participants and the series of farm management educational programs that was being delivered to the farmer-participants over a several year period.

The reporting form used was the Benchmark Form. Approximately 300 were filled out and sent to the office per year. Initially there were serious data collection problems. Because there was no feedback loop, the numbers lacked credibility. There was no data verification or follow-up until the mid 1980's. Extension field faculty and farmers had questions about the use of the Benchmark Form until that time. It was only when data was shared back to the field faculty - data that was useful for both field faculty and farmers - that there was a basic buy-in from field faculty who also in the process validated the data they were supplying (O'Sullivan, annual Benchmark Form Reports, 1985-1995).

In 1996 the Cooperative Extension System in North Carolina (representing both Cooperative Extension at NCA&TSU and at NCSU) began a new Long Range Program build around Cooperative Extension Major Programs (CEMPs). This plan continues in use. Integrated into it is an electronic reporting system called the ERS (Extension Reporting System). This system lists evaluation objectives, measures of progress (MOPS), and impact indicators. In addition, success stories are also reported. The entire package is used to report successes to various stakeholders identified in a targeted marketing matrix (Richardson & O'Sullivan). The ERS can report outcomes of small farm programs to interested stakeholders at a moment's notice.

In 1988, Cooperative Extension at NCA&TSU received a grant from the W. K. Kellogg Foundation called "Ways to Grow." It continued through 1994. As project report-

ing vehicles, case studies were written describing the experiences of the 44 small farmers who tried different alternative enterprises. These case studies give information about production, marketing, specific project effort, plans, words of advice, and suggested resources for further information (Wechsler, 1995). These have proven to be very worthwhile evaluation reports, useful over a number of years to share information about the particular efforts of the farmers and to market the NCA&TSU program.

From 1994 until 1998 Cooperative Extension at NCA&TSU participated in another project funded by the W.K. Kellogg Foundation, "Partners in Agriculture" (W. K. Kellogg Foundation). PIA was a coalition of seven partners and four community sites exploring sustainable agriculture and community development issues. The model used for evaluation in this project was collaborative cluster evaluation (internal and external). NCA&TSU was responsible for the internal evaluation of the project, which involved small farmers at several community sites. While the evaluation process was not as successful as it could have been - because of the failure to establish an agreed-upon evaluation plan - it did produce important outcomes. These included benchmark community overviews and an outside evaluation report. Finally the project results were disseminated to various publics through a video - which made a very compelling statement about the project experience in participants' own words.

Summary observations from these experiences evaluating small farm programs in North Carolina:

- Evaluation takes resources.
- Evaluation takes a plan - targeted (time, resource and focus) toward the expected uses of the evaluation.
- Evaluation needs buy-in by farmers and field staff.
- Evaluation needs an understood use by the farmers and field faculty. Both of these steps can be accomplished.
- Evaluation does not need to be conducted by outside experts, although technical assistance may be needed for planning, comparative perspective.

- and specialty services such as videotaping.
- If the evaluation is not started, it won't ever get done.

A suggested model for successful evaluation design for small farm programs:

Recent presentations concerning a clear evaluation design for programs like a small farm program can be found in "Evaluation Voices: Promoting Evaluation From Within Programs Through Collaboration" (Evaluation and Program Planning 21, 1998, 21-29) and in "Advanced Topics in Conducting Collaborative Evaluations," presented in a pre-session of the American Evaluation Association annual meeting, November 3, 1999.

- Need for enhanced internal program evaluation must be clearly understood and agreed to throughout the system.
- Cluster evaluation - to ground the evaluation and minimize resource costs.
- Community voices build local resource skills, shared vision, and stakeholder understandings.
- Evaluation voices build evaluation expertise throughout the program with all stakeholders.
- The steps for a successful evaluation sequence within the cluster:
 1. Program purpose/outcomes formulated.
 2. Development of meaningful and answerable evaluation questions which can show achievement of the purpose or desired outcome.
 3. Implementation phase - gathering evidence of activities, programs (inputs, outputs, outcomes, and impacts as agreed to) (documentation and use of the data).
 4. Use appropriate and reasonable data collection techniques.

As can be readily judged, this approach of "evaluation" is different from "monitoring" or "accountability." These latter two activities are the traditional Extension processes of keeping track of inputs and the activities of an educational program. Those are still important in terms of accountability. However, if there is need to show outcomes or results, then a decision has to be made to move into a planned evaluation process such as described above. In this model, changes in the skills and behaviors of program participants need to be reported to show program successes. Results like that need program participants to share their experience.

That process can best be achieved by following the steps laid out above. This strategy has been used in a number of situations that are comparable to small farm educa-

tional outreach programs. These include community-based pre-school programs, school programs, and "school to work" programs in North Carolina.

A "cluster" evaluation model brings together programs that have a common theme, place, or process. Within the "cluster," evaluation questions are agreed upon and evaluation steps, timetable, and other evaluation components are conducted in common. A "collaborative" evaluation is one in which program participants (as key "stakeholders") are engaged actively in the evaluation process. These approaches get beyond traditional reporting. It might include case studies or other types of qualitative reporting which help explain the context, process, and experiences learned. It might include the development of an evaluation fair so that different clusters or educational program leaders have the opportunity to share results and outcomes. Such efforts allow participants to learn from each other.

It is a new day for evaluation of small farm programs in Extension and elsewhere. Stakeholders want to learn about results and outcomes of programs. This requires evaluation collaboration, a clear evaluation plan, and resources to carry out the planned process. These all need to be in plan early on in the process. None of the steps needed are insurmountable. Evaluation is a learning experience.

References

- O'Sullivan, J. The Benchmark Form. Crop Year (1983 to 1995). NCA&TSU Cooperative Extension Program.
- O'Sullivan, R. & A. D'Agostino. 1998. "How collaborative approaches promote evaluation with community-based programs for young children and their families." A paper presented at the annual meeting of the American Evaluation Association, Chicago, IL.
- O'Sullivan, R. & J. O'Sullivan. 1998. "Evaluation Voices: Promoting Evaluation From Within Programs Through Collaboration" (Evaluation and Program Planning 21, 1998, 21-29).
- O'Sullivan, R. & J. O'Sullivan. 1999. "Advanced topics in conducting collaborative evaluations." A paper presented in a pre-session of the American Evaluation Association Annual Meeting, November 3, 1999, Orlando, Florida.
- Richardson, J. & J. O'Sullivan. 1998. "Targeted Marketing for Accountability Information." North Carolina Cooperative Extension Service Task Force Report.
- Wechsler, D. 1995. "Ways to Grow Case Studies." North Carolina A&TSU Cooperative Extension Program.

Overcoming Program Evaluation Challenges

Robin Shepard

Assistant Professor of Life Sciences Communication and
Extension Water Quality Coordinator, University of Wisconsin-Madison

Evaluation of education is commonly approached by examining the differences that our efforts have made in those who take part in our programs. But this is an overly simplistic view of both the process of evaluation and its purpose. Evaluation involves a systematic collection of information about the activities, characteristics, and outcomes of programs, personnel, and products for use by specific people to reduce uncertainties, improve effectiveness, and make decisions with regard to what those programs or products are doing and affecting (Patton, 1982). It is the process of comparing evidence with criteria in order to assess the value of a program, activity, or product.

PURPOSE OF EDUCATIONAL PROGRAM EVALUATION

Evaluating educational programming can target a number of important purposes, including:

- assisting in planning and setting program objectives;
- assessing program procedures and tasks as they occur;
- assessing specific program short-term effects; and
- assessing long-range goals.

Each of these purposes actually relies on different types of evaluation, especially in the techniques used.

COMMON TYPES OF EVALUATION

Perhaps the most overlooked aspect of evaluation is how it fits into program planning. Evaluation often addresses critical questions about accountability, effectiveness, and efficiency. But in developing the criteria by which programs are measured we also collect information about what a program can and/or should be.

FORMATIVE EVALUATION TECHNIQUES. These evaluations are aimed at providing information for program planning, improvement, modification, and management. Formative evaluations often focus on identifying audience needs and/or issues, problems, behaviors, etc., that a program should address. When done at the beginning of a project, they form the basis for why and how the project proceeds. They also provide a baseline of information from which changes can be monitored.

Program Monitoring Techniques. These evaluations

vary widely from periodic checks of compliance with policy to routine tracking of service delivered to counting the number of clients. These evaluations most often include post-workshop and post-field day questionnaires and program participant surveys that focus on who attended and how they felt about the program they attended.

SUMMATIVE EVALUATION TECHNIQUES. These evaluations are aimed at determining program results and effectiveness, especially for the purpose of making major decisions about program continuation, expansion, redirection, and/or funding. This type of evaluation often focuses on what happened as a result of the program. Such evaluation usually requires data from multiple points in time so that changes can be measured. As the title suggests, summative evaluations are done at the end of a project and focus on impacts. In many instances, summative evaluations should be based on earlier data collection efforts. They may incorporate formative evaluation principles as part of a comprehensive evaluation plan.

PLANNING YOUR EVALUATION

Evaluation should not be an afterthought. It is an essential component of a program and should be carefully integrated into a project from the very beginning. As you begin the task of determining how to evaluate, try walking through the following five steps:

Step #1. Begin with a basic review of the project's overall purpose, its objectives, the topics or issues addressed by the project, and its target audience.

Step #2. Consider that evaluation can have one or more specific purposes; it is important that your evaluation strategy flows directly from those purposes. For example, an evaluation may:

- show changes in knowledge or awareness of an issue;
- provide information to specific audiences;
- show changes in attitudes;
- show changes in behavior;
- document practice adoption;
- ascertain monetary impacts on farmers who adopt

specific practices; or

- show changes in the condition of natural resources.

Step #3. In order to make the results of the final report useful, consider who holds a stake in the project and its outcomes. This illustrates the importance of identifying specific information that stakeholders want or need.

Step #4. Take stock of the information you already have and what you need to collect. An evaluation of a project rarely relies on a single data source or single collection strategy.

Step #5. Select the appropriate evaluation method and/or methods after you address:

- program purpose;
- evaluation purpose;
- stakeholders and their needs; and
- the information you have in hand versus what you need to collect.

Too often the methods for evaluation are determined before those points are addressed.

Deciding what to measure or observe is perhaps the most critical question that the evaluation planning process must address. It is important that evaluation planning not jump to "what and how to measure" too quickly.

There is a range of program characteristics that are commonly considered as items to measure. These include: the setting or context in which the program occurs, program participant reactions, the process of implementation, program outcomes or reaching specific program goals, or even measuring program costs and/or savings to program participants (Herman, Morris, and Fitz-Gibbon, 1987).

As the evaluation is planned it is helpful to ask additional program stakeholders about the impacts they are most interested in. Impact-focused evaluations require more than just recording participation numbers or participant reactions through workshop questionnaire (Mohr, 1995). Impact-focused evaluations consider what happened after participants left the workshop or demonstration and implemented what they learned.

A SUGGESTED PLANNING PROCESS

Before setting out to evaluate an educational program, try writing down some evaluation goals and objectives. This should actually be done early in the program design process, before implementation and during the actual program planning process. This important step will not only clarify the purpose of the evaluation, but it will help explain your intentions to administrators, staff, and

even program participants. This goal-setting also leads to a staff commitment to action and a feeling that evaluation is not an afterthought but part of program design.

More specifically, planning an evaluation should focus on:

- what information is important to collect over the life of the project (i.e., knowledge, skills, attitudes, and/or behaviors);
- how the information should be collected (i.e., surveys, focus groups, interviews, meeting questionnaires, etc.);
- who will collect the information (i.e., project staff or an external professional);
- the time frame for data collection (i.e., weeks, months, is it a one- or time-two comparison); and
- how the results will be communicated (i.e., report, newsletter, news releases, memos, personal discussions, etc.).

Programs or projects with external advisory committees may be able to take advantage of such a group for evaluation planning. Evaluation is important for accountability purposes, and those who establish the terms of accountability should take part in determining the what and how of information collection regarding the successes and obstacles of the program. This group will likely want to know what the program accomplished, and therefore should have opinions about what are or are not important measures of program performance.

OVERCOMING SPECIFIC BARRIERS

As you approach the evaluation of a project there are a number of common issues that should be addressed by those responsible for planning the evaluation. Many of these issues need to be addressed at the program delivery level, or directly by staff conducting the evaluation.

Some of the most common barriers to evaluation include:

- Lack of familiarity with the project being evaluated.
- Limited evaluation skills in those conducting the evaluation.
- Inability to write for lay audiences and translate evaluation findings.
- Limited design/desktop publishing support for summarizing findings into reports.
- The investigative skills of those conducting the evaluation being too narrowly focused.
- Lack of familiarity with both evaluation processes and the subject being evaluated (e.g., a specific aspect of farm management).
- Inattention to detail in collecting information.
- Lack of commitment to working with project part-

ners to determine collaborative impacts.

- Failure to plan funding for the evaluation in the general implementation budget.
- Staff turnover - by evaluation time, those responsible for implementing the education program may have moved on to other programs.

Finally, one of the most pervasive and difficult problems to address is when those in charge of a program see evaluation as a threat (Van den Ban and Hawkins, 1996). This can be a serious problem, especially in agency cultures where criticism might cause loss of face and is not seen as a positive way to help staff improve their work. The issue of perceived threat must be addressed by administrators and organization leaders. The feedback system of an agency or institution must be supportive and encouraging - rather than responding negatively to evaluation results.

UNIQUE EVALUATION CHALLENGES

During the past decade, evaluation measures associated with educational programs have become more challenging and sophisticated. For example, in the 1980s and early 1990s, the United States Department of Agriculture required cooperative state extension service staff to record program participant or attendance numbers and report them annually. While such numbers are still required in certain program areas, the type of educational programs and the issues that extension staff address cannot be adequately judged solely on participation rates. Some of the most challenging impact measures associated with state extension service programs require in-depth evaluation techniques and special data collection efforts.

EVALUATING PRACTICE ADOPTION. It may be insufficient merely to count who attended a meeting or received information. The focus must be on the application of program ideas and the extent to which those ideas are used. For example, farmers may be instructed on the virtues of nutrient management planning on the farm. The number of farmers attending the educational program, although an important piece of information, is of limited use. More difficult to obtain but also more useful would be data on the extent to which farmers with nutrient management plans actually followed those plans.

COLLABORATIVE PROGRAM EFFORTS. Many educational programs are not conducted in isolation from other social programs. For example, water resources protection programs often include multi-agency efforts, with several agencies assuming roles for delivering information to target audiences. Evaluating the effectiveness of

educational efforts aimed at getting private well owners to annually test their water supplies may need the combined efforts of local county extension agents, local health departments, and/or state environmental agencies (i.e., department of natural resources or environmental quality). These other stakeholders should be part of program planning and evaluation design so that different aspects of audience change will be considered.

VOLUNTEER CONTRIBUTIONS. Educational programs often involve tapping the expertise, time, and knowledge of local volunteers. In environmental cleanup programs, such as adopt-a-highway or adopt-a-watershed, volunteers give their time and sometimes even money to help. Because they are outside the agency, these volunteer resources are often overlooked. However, in the present agency world of focusing on program efficiency, volunteer contributions are important to show the leveraging local expertise.

POLICY DEVELOPMENT. This area often requires specialized evaluation tools and may include a number of different techniques to evaluate policy comprehensively. However, in the 1990s, many government agencies placed increased emphasis on opening policy discussion and development to local citizens and stakeholders. The result is a participatory management philosophy where policy development and implementation occur locally (i.e., the development of manure storage ordinances, construction site erosion control ordinances, and land use/zoning policy). This type of evaluation may require qualitative skills that rely on case studies and local data collection.

FINDING ASSISTANCE AND HELP.

Evaluation should be part of program design. It is just as important as actual program implementation and needs to be considered as early as possible in the development of educational programs. As evaluation issues arise, those who are responsible for evaluation may want to enlist the assistance of evaluation professionals. Local land-grant institutions are often a source for such help. Many have research centers, institutes, or laboratories. Private-sector consultants are sometimes available, but their services are often focused only on specific topics or types of evaluations.

Literature Cited

Herman, Joan L., Lynn Lyons Morris, and Carol Taylor Fitz-Gibbon. 1987. *Evaluator's Handbook*. Newbury Park, CA: Sage Publications.

Mohr, Lawrence B. 1995. *Impact Analysis for Program Evaluation* (second edition). Thousand Oaks, CA: Sage Publications.

Patton, Michael Quinn. 1982. *Practical Evaluation*. Newbury Park, CA: Sage Publications.

Van den Ban, A.W. and H.S. Hawkins. 1996. *Agricultural Extension* (second edition). Cambridge, MA: Blackwell Science Ltd.

University Outreach and Extension's New 'Focus Team' Approach to Setting Research and Extension Priorities and Programs for the University of Missouri and Lincoln University

Joan Benjamin

co-coordinator

Sustainable Agriculture Extension Program

In October 1999, the Sustainable Food and Farming Systems Focus Team (Sustainable Focus Team) was formed at the request of the Sustainable Agriculture Extension Program of the University of Missouri and Lincoln University (an 1890 institution). The Outreach & Extension program of these two Universities uses focus teams to give attention and resources to critical topic areas which have been neglected -- in this case sustainable agriculture and community food systems. In a news release announcing the formation of the new focus team, Tom Payne, dean of the MU College of Agriculture, Food and Natural Resources stated that "The sustainability of Missouri's agriculture is a priority." He explained that "This fact calls for added emphasis under the current farming crisis. The newly formed Sustainable Food and Farming Systems Focus Team will provide that emphasis." Ron Turner, University of Missouri executive vice-president and director of Outreach and Extension commented that "Sustainable farming has become a crucial area of interest to many Missourians" He emphasized that "This focus team demonstrates the university's strong commitment to Missouri farmers and rural communities, as well as to consumers and the environment."

The Sustainable Focus Team is a unique experiment because through its membership, and the membership of its Advisory Council, it brings together farmers (individuals and representatives of farmer organizations), University Outreach and Extension (UO/E) educators, campus faculty, government agency personnel, and non-government organization representatives. These partners are charged with developing outreach and extension programs that will help Missouri's small farmers and rural communities become socially, ecologically, and economically viable. In order to emphasize the cooperation necessary to make this partnership work, and insure that a variety of viewpoints are being taken into consideration, the Sustainable Focus Team is being led by a Leadership Council rather than a single leader.

The Leadership Council consists of the following people:

Joan Benjamin, co-coordinator of the Sustainable Agriculture Extension Program (this program has made it a priority to include farmers in every aspect of its work, from planning to program development and implementation), program manager for the Missouri Sustainable Agriculture Demonstration Award Program (a grant program, funded by the Missouri legislature, which provides funds for farmers to experiment with sustainable agriculture techniques on their farms), and Sustainable Team liaison;

Laura Bergman, program manager for the Sustainable Agriculture Extension Program and the Sustainable Communities Program (a Kellogg grant funded project, designed with this purpose: To help people find and reach their hopes and dreams while leaving equal or better opportunities for future generations);

Judy Grundler, program coordinator for the Integrated Pest Management Program of the Missouri Department of Agriculture;

Mary Hendrickson, network coordinator for the Community Food Systems Program (a program funded by the Missouri Department of Agriculture through a grant to UO/E. The program helps communities and individuals increase their self-reliance through local food systems;

Debi Kelly, program manager for the Missouri Alternatives Center (a resource center that provides alternative agriculture information for Missouri farmers);

and K. B. Paul, program leader for Lincoln University's Small Farm Family Program (a program that assists limited resource and minority farmers through one-on-one assistance from Small Farm Family Education Assistants).

A UNIQUE PARTNERSHIP

A close collaborative working relationship has existed for several years among the Sustainable Agriculture Extension Program, the Missouri Department of Agriculture, the Missouri Alternatives Center, Lincoln University's Small Farm Family Program, and the Rural Sociology Department of the University of Missouri. The Sustainable Focus Team has formalized this collabo-

ration, to give it a higher level of visibility and credibility both within and outside of the University Outreach and Extension (UO/E) system, and to provide increased funding and support from within the UO/E system (through access to Outreach Development Funds). Adding the new state-funded Community Food Circles program to the collaboration has helped integrate the concepts of food, farming, and people in sustaining rural communities and mediating contentious issues between rural and urban community members.

IDENTIFYING A PURPOSE AND PRINCIPLES

The 25 members of the Sustainable Focus Team met for the first time in October 1999. At that meeting, the team members mutually agreed upon a purpose and a set of guiding principles. These were modified by the Team in November, and are listed below. The purpose and principles have generated enthusiastic and sometimes heated discussions. The language will continue evolve over time to reflect the needs of the Team, but the core meaning will remain the same.

The purpose and principles are of critical importance because they are the guidelines that effect all of the actions of the Team. The purpose and principles can best be understood in terms of the Constitution of the United States. The preamble of the Constitution, "We the people, in order to create a more perfect union..." sets out the purpose. The Constitution lays out the principles by which the government will function. These principles are not laws or rules -- the laws are made by Congress, and those laws must be consistent with the principles. The Courts check the laws against the Constitution to see if they follow the principles (are Constitutional).

The 25-member Sustainable Food and Farming Systems Advisory Council (Sustainable Advisory Council), is responsible for holding the Focus Team accountable to its purpose and principles, and will help insure that the needs of Missouri's small farmers and rural communities are met. Like the Focus Team, the Advisory Council is made up of a diverse group of stakeholders. The Sustainable Advisory Council includes extension and campus representatives of the University of Missouri and Lincoln University, representatives from the Missouri Department of Agriculture, the Missouri Department of Natural Resources, the Sierra Club, Patchwork Family Farms, Small Farm Today magazine, Kingdom of Callaway Food Circle, the Christian Agriculture Research Institute, the Social Concerns Office of the Diocese of Jefferson City, the National Farmers Organization, and Natural Resources Conservation Service. The Sustainable Team will hold their first meeting with their Advisory Council in January 2000.

PURPOSE:

To develop and support sustainable food and farming systems that enhance families and communities ecologically, socially, and economically.

PRINCIPLES:

Grassroots involvement of farmers and citizens at every level

Listen to, Respect, and Attend to individuals equally
All decisions and actions have to be consistent with the principles of sustainability

Public/Community owns research and should have access to it. Team will facilitate access to information and communicate it to all members of the community

Actively seek diverse ideas and people

Enhancing sustainability: helping people thrive not just survive

Everyone a teacher, Everyone a learner (Co-learning, Collaborative)

In every deliberation, consider the 7th generation

Linking people, purpose, and place

Action will follow planning: We will Act!

Speak from the heart with integrity, authenticity

Help your neighbor

Actions are family friendly

Over the past two months, Sustainable Focus Team members have worked to define central issues, and begin designing and developing educational programs to address those issues. Team members have been successful at "thinking outside the box," to come up with programming that is truly new and different. They started out by developing an issue model and quickly discovered that all of the issues dealing with sustainable food and farming systems are interrelated, and all of the issues must consider the economic, environmental, and social aspects of sustainability. The Team members felt that even a mind map was too restrictive to illustrate their model, and eventually came up with the following bubble diagram that represents a three dimensional, ever-shifting grouping of issues.

Sustainable Food and Farming System Focus Team

Because all of the issues identified by the Team are inter-related, these three working committees take into consideration many more issues than those listed by the group titles. The following action areas were developed by each work committee. In January, the Sustainable Focus Team will present their action plans to their Advisory Council, and ask for their advice in implementing these programs.

Issue Model

AREAS OF INTEREST

Through team discussions with facilitator, Mel Zielinski, Regional Agronomy Specialist, Madison County Missouri Extension, the following areas were identified as having direct connections to the purpose of the Sustainable Team and its work.

Social	Safe Food
Ethics	Consumer
Justice	Economics
Spirituality	Finance
Stewardship	Marketing
Family	Value Added
Health/Nutrition	Ownership

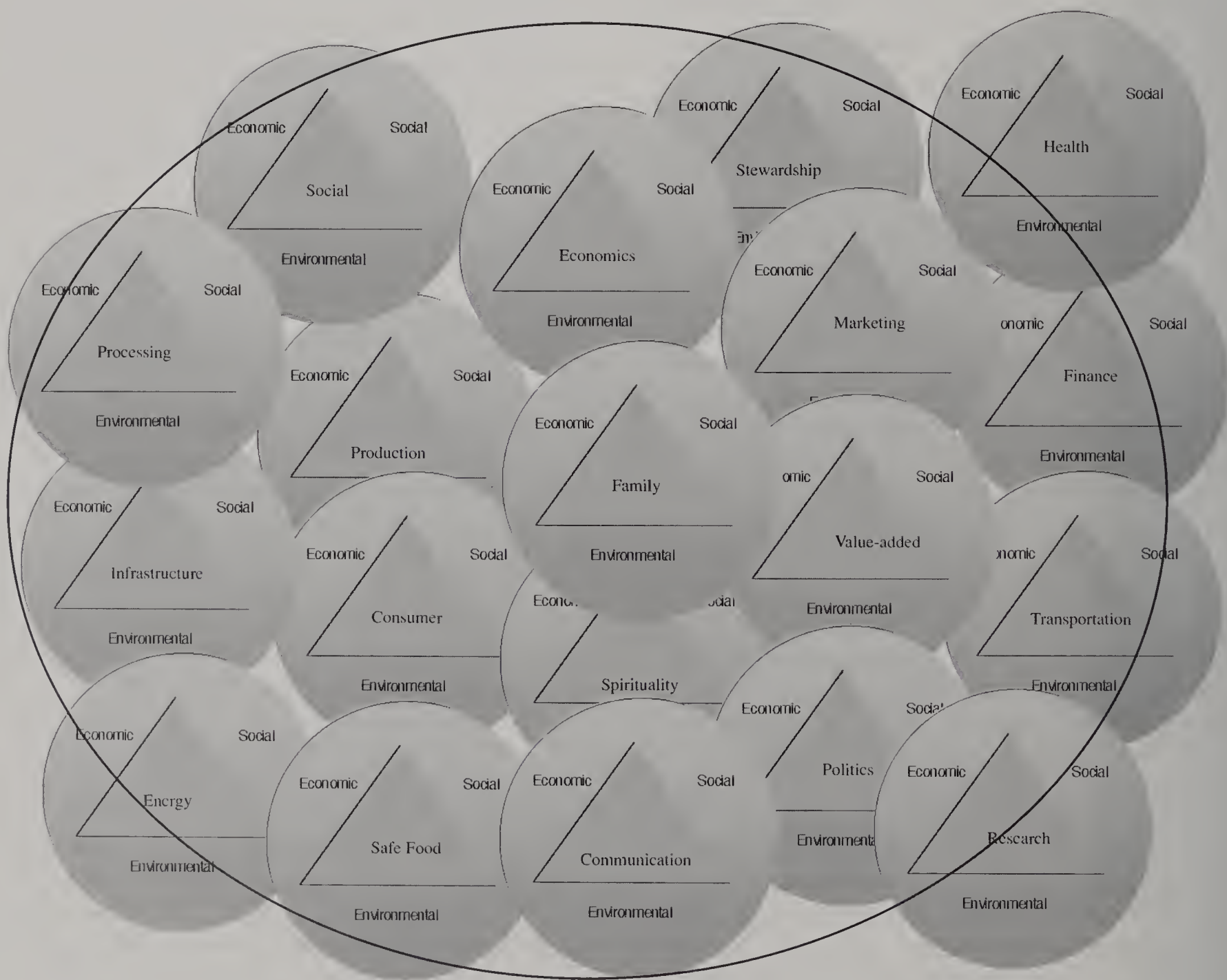
Politics
Research
Production
Infrastructure

Energy
Processing
Communications
Transportation

ACTION PLANS

Once the Team identified issue areas, team members identified which issues were their highest priorities, then divided into three main groups:

Research/Producer
Marketing
Social/Consumer



RESEARCH/PRODUCER COMMITTEE

The research and production component of the S-Team will be looking at existing research resources which apply to Missouri producers, specifically looking at systems based research that using sustainable practices. The research resources within the MU campus system, Lincoln University System and from other states will be compiled. The Sustainable Team will identify and outline areas which not currently addressed by existing programs for recommendations of future sustainable research proposals.

The Sustainable Team is also looking at what works well in specific outlying centers and developing a format which could be used at similar settings throughout the state. The farm walks which are conducted from the Forage System Research Center helps facilitate information sharing from producers to research and extension personnel and vice versa. The Sustainable Team will be looking at the historical development of the "farm walk" concept with the intent of providing an outline of the process for other areas in the state.

The use of the Monitoring Tool Box will also be implemented in our state. This whole farm monitoring program, developed by the Land Stewardship Project in Minnesota, is designed to help farm families measure the success of their farm. Several different components are used in the measuring process such as financial data, quality of life, soil, streams, pasture vegetation, pesticide use and wildlife. The Sustainable Team will facilitate the use of the Monitoring Tool Box within different areas in the state with the intent of making modification for specific Missouri systems.

ACTION AREA 1: Outline a community based farm walk model after the Forage Systems Research Center at Linneus

GOALS/EXPLANATION: To strengthen farmer oriented research with the outlying centers, and strengthen interaction between farmers, university researchers, and extension personnel

ACTION AREA 2: Review and implement the Monitoring Toolbox, produced by the Land Stewardship Project

GOALS/EXPLANATION: To work with a select number of farms to implement the Monitoring Toolbox within Missouri and modify (if necessary) so that it is appropriate for our state

ACTION AREA 3: Outlining existing research resource information

GOALS/EXPLANATION: To determine what is currently being done in the area of farming systems research, so that existing findings can be disseminated, and new research projects initiate where needed

ACTION AREA 4: Continuing Education

GOALS/EXPLANATION: Attending the ACRES Conference: Building An Ecofarm: A Soils Up Approach, December 9-11

Marketing Committee

ACTION AREA 1: SARE Publications

GOALS/EXPLANATION: Work to increase the awareness of the SARE program by getting publications in every county office

ACTION AREA 2: Agriculture Lenders Seminars

GOALS/EXPLANATION: WORK with established Agriculture Lenders Seminars to include

sessions on sustainable agriculture. Discussions with Ron Plain, Agriculture Lenders Coordinator, will begin now so that implementation can begin for next years' seminars. Ron Macher's brochures will be distributed in this years' seminars

ACTION AREA 3: Marketing Seminar (New Program)

GOALS/EXPLANATION: Development of a marketing seminar similar in format to Agriculture Lenders: BD day, 3 main topics. Initial topics proposed: financing/banking, marketing strategies, organizational structures, and record keeping. Minimum of 2 seminars per UO/E Region Proposed as an annual method of sharing information with farmers and citizens

ACTION AREA 4:

UO/E Guide sheet Development

GOALS/EXPLANATION: Immediate needs: Direct Marketing, Organizational Structures

ACTION AREA 5: Staffing

GOALS/EXPLANATION: Request regional directors to consider adding sustainable

agriculture as a title and responsibility of existing staff as this years' staffing plan, and begin implementing the county's plans of work (As an example: During the previous staffing plan, some Agronomist positions were expanded to also cover Natural Resources, given an identified need in the community. This is one way of focusing staff resources on sustainable agriculture w/o new hiring

Social/Consumer Committee

ACTION AREA 1: Local Food Systems Approach to Food Security: Education
GOALS/EXPLANATION: Submit an application for NC SARE PDP (Professional Development Program) funds to educate USDA agency employees, farmers, and others on how to use a Local Food System Approach to Food Security Proposal due 12/17/99

ACTION AREA 2: New Staff: UO/E 'Networker' in St. Louis

GOALS/EXPLANATION: Apply for ODF (Outreach and Development Funds) for a 2-year project

to hire a Networker in St. Louis to link the public and various marketing opportunities for agricultural products with farmers in the East Central Region The proposal has been written and submitted once, with directions to submit through a Base Program Team, which this group facilitates

ACTION AREA 3: Public Education Forums in Urban Centers (Springfield/Joplin, St. Louis, Kansas City) Groups targeted include PTAs, Mothers Groups, Civic Organizations, etc.

GOALS/EXPLANATION: Topics: getting to know your food, future of your food supply, etc.

ACTION AREA 4: Children's Magazine

GOALS/EXPLANATION: Design a simple, fun booklet on sustainable agriculture aimed at a 4th grade level. Include pages to color, a story to read, puzzles, etc. Use those developed by the Missouri Department of Agriculture for models

ACTION AREA 5: Portable exhibit on sustainable agriculture/ food supply concerns

GOALS/EXPLANATION: Exhibit will be available for use throughout the state, be interactive and fun, and targeted toward middle school aged youth while being appropriate for adults

ACTION AREA 6: Outstanding National Exhibit to be displayed at the Science Center or other public museums to generate awareness of sustainable agriculture and food issues

ACTION AREA 7: Curriculum on sustainable agriculture/food systems for high school classes and FFA

GOALS/EXPLANATION: Initial goal: A seminar for Vocational Agriculture teachers in July prior to their annual staff meeting

ACTION AREA 8: Curriculum development for elementary students

GOALS/EXPLANATION: Initial goal's Review the National SA Curriculum Guide in process through the Center for Rural Affairs and National SARE

ACTION AREA 9: Utilizing existing tools for youth education

GOALS/EXPLANATION: Using tools that are in place and popular with youth as an avenue of discussion on sustainable agriculture and food issues.

Examples: 1)SimFarm CD ROM game, 2) Murals depicting Urban development over the past 100 years (used currently in CD, could be expanded for farmland preservation and other discussions

THE FUTURE

The Sustainable Team has accomplished a lot in the first three months of its existence. In 2000, they will work with the Sustainable Advisory Council to develop an implementation plan for their programs. They will also develop a new and innovative evaluation plan to go

with the new programming -- one that emphasizes empowerment of people, rather than strictly numbers.

The Sustainable Focus Team members find that they are energized by their meetings. The enthusiasm created by bringing together this diverse group of stakeholders has already increased communication between University Outreach and Extension and the farmers and communities it serves. Sustainable Team members are looking forward to developing programs to help small-scale farmers and rural communities survive and prosper. At the same time, they are creating a model for future community cooperation.

Participatory Relationships: Recipes for Success

Judith F. Gillian

Director, New England Small Farm Institute

Successful participatory relationships between agricultural professionals and the communities they serve are key to sustained project effectiveness. The structural and attitudinal barriers that often undermine even the most well-intended projects are best addressed during a project's planning phase.

In an effort to move beyond the limits of "traditional" educational models (e.g., the top-down transfer of information from "expert" to "student"), educators have developed a variety of approaches to group or mutual learning, all of which share several common principles. These include:

- a focus on cumulative learning by all participants (project stakeholders as well as planner/facilitators),
- emphasis on seeking multiple perspectives, and
- recognition that only through group inquiry will a project's full potential be revealed.

Elements of these approaches will be discussed. "A Typology of Participation," offered by Jules N. Potty in *Regenerating Agriculture*, will be examined, with emphasis on practical application for current projects as well as projects now in the design stage.

Building Support for Small Farms and Sustainable Agriculture:

Partnerships Between Community-Based Organizations and Public Institutions

Bonnie Rice, coordinator

Washington Sustainable Food & Farming Network

Chris Feise, director

Washington State University

Center for Sustaining Agriculture and Natural Resources

In the past year, an exciting new partnership has been formed between Washington's land-grant university, Washington State University (WSU), and the Washington Sustainable Food & Farming Network ("the Network"), a grassroots network of farmers, non-profit organizations, and businesses advocating for small farms and sustainable agriculture in Washington State. In late 1998, a groundbreaking "Letter of Mutual Commitment" was signed by the two groups to increase support for small farms and sustainable agriculture at WSU - the mark of a new era in communication among small farmers and community organizations and WSU. The partnership is currently developing a statewide Small Farm Program and other initiatives.

These initiatives between grassroots organizations and institutions have attracted interest from organizations and institutions in several other states that are also working to create more institutional support for small farms and sustainable agriculture, and they will be used as case studies in upcoming seminars on creating institutional change.

The Washington Sustainable Food & Farming Network has also been working with the Washington State Department of Agriculture (WSDA) to increase its awareness and support of small farms and sustainable agriculture. In 1998, a Sustainable Agriculture Program was created at WSDA as a result of collaborative work among the Network, the EPA, and WSDA.

Entrepreneurial Training for Small Farmers

Vaughn Rasar

Project Coordinator
Heart of Maine RC&D
Newport, ME

In 1997, Heart of Maine Resource Conservation & Development (RC&D) and the Center for Entrepreneurship and Small Business took the first step in creating an entrepreneurial culture by signing a Partnership Agreement with the Entrepreneurial Education Foundation of Denver, Colorado to provide FastTrac training in Maine. The FastTrac program is a tested, comprehensive business development program that equips entrepreneurs with the skills to develop and manage successful business ventures.

Through presentations, coalitions were built locally, regionally and statewide to support the training. There are now over 130 FastTrac coalition members.

The need to provide education and technical assistance to small businesses is particularly acute in rural, economically depressed areas of the state. It is often the small businesses that provide the bridge from welfare and poverty to self-sufficiency and prosperity. Many of these small business owners are reluctant to seek technical assistance or they are unaware that it is available to them. Consequently, it is crucial that educational efforts include intensive recruiting strategies in these rural areas.

To date, 12 FastTrac courses have been completed. The composition of classes has been quite varied which stimulates new ideas. Networking, quality instructors and integrity of the FastTrac training materials are some of the features that graduates cite as very valuable. Maine Governor Angus King, Jr. has said that the ten most important things that all small businesses should do is take FastTrac.

INTRODUCTION

Farmers and ranchers are challenged to find new ways to improve the bottom line if they are to remain an integral and productive part of the economies of rural communities. Many opportunities exist in small scale operations to develop value-added products, improve the marketing of niche products and develop other complimentary farm-based business. A pilot entrepreneurial training

program, in Maine, aimed at natural resource-based businesses, demonstrates that new jobs and ventures can emerge with adequate small business education.

BACKGROUND

In the last two years, the Heart of Maine Resource Conservation and Development (RC&D) and the Center for Entrepreneurship and Small Business at the University of Southern Maine have been providing FastTrac small business education to targeting rural Maine communities. They have also been creating local, regional and statewide coalitions to support Maine's emerging entrepreneurs. There are well over 500 Maine citizens who are participating in the FastTrac training or who are participating in the FastTrac coalitions.

WHAT IS FASTTRAC?

The Heart of Maine RC&D in partnership with the Center for Entrepreneurship and Small Business are supporting the educational needs of small businesses located in rural Maine through a nationally recognized business development program called FastTrac. FastTrac helps entrepreneurs and small business people acquire the skills needed to develop and manage successful business ventures. This innovative, two-phase training program is designed to:

- o provide entrepreneurs and small business people with the confidence to go forward with their ideas;
- o provide the basic skills to start and grow businesses;
- o develop the networking capability to strengthen these businesses;
- o open up financing to these businesses;
- o expose entrepreneurs and small business people to the expertise of the broader business community; and
- o create jobs either from new start-ups or by growing a business to a new level.

FastTrac New Ventures, tailored for start-up businesses,

is a 32 hour program which emphasizes identification of business opportunities, market research, launch strategies and the development of a feasibility plan. Participants completing the course will have developed a business feasibility plan. Fifty to Seventy five percent of FastTrac graduates launch a new business within one year of graduation. Up to an additional 20 percent launch a business within two years of graduation.

FastTrac Planning, designed for growing businesses, is a 45 hour program which focuses on planning, research and evaluation of strategic growth as well as the operational aspects of businesses. Participants completing the course will have completed a comprehensive business plan for their particular business. Ten to twenty five percent of graduates more that double their sales within one year. Forty to fifty percent of graduates more than double their sales within two years of graduation.

FastTrac New Venture and Planning both offer expert advice, networking opportunities with other small business operators and the collaborative learning process. The course is further supported through textbooks, workbooks and courseware.

TO TRAIN OR NOT TO TRAIN...

The U.S. Small Business Administration statistics show that only 40% of businesses are still open after 5 years. Conversely, FastTrac research has shown that after 31,000 students, 74% of its program graduates are still operating profitably after 6 years.

MAINE'S ULTIMATE ENTREPRENEURIAL TRAINING PROGRAM

The FastTrac program is more than a simple offering of a training program to the business community. This educational strategy is built upon broad-based involvement and cooperation among the business community; business organizations; financial institutions; and local, state and federal organizations. As such, the delivery of technical assistance via the FastTrac program requires careful and thorough coalition building prior to any classroom sessions.

The coalitions represent all aspects of the business community including local business leaders; small business advisory councils; economic development boards; and key organizations such as the Chamber of Commerce, Council of Governments and others. Coalitions promote the training in their local community and recruit participants; schedule training and locate a training site; and raise funds for scholarship .

Emphasis is placed on hiring experienced, successful

entrepreneurs as instructors who are well known and respected in the area. Instructors are ask to do much more than deliver a prepackaged FastTrac curriculum. They are expected to serve as mentors, role models and advisors to FastTrac participants. They are also expected to work with the coalition to identify business counselors, guest speakers and other community resources which will enhance the training.

As administrators of FastTrac in Maine, the Heart of Maine RC&D and the Center for Entrepreneurship each have a designated service area but work jointly with communities in coalition building and things that build integrity for the statewide training program.

VISION OF THE PARTNERSHIP

The partnership is made up of three entities; the Heart of Maine RC&D, the Center for Entrepreneurship and a local entrepreneur. Together they firmly believe and work for the vision of "Vibrant, prosperous communities for the enrichment of all people". Prosperous communities are places where live, not just where they sleep! This successful partnership plays

off the strengths of each to create its synergy. The success of the FastTrac small business education program in Maine was highlighted by Governor Angus King Jr. at the 1999 Annual Small Business Conference when he said that the FastTrac training is one of the top ten things that all small businesses should do.

The training effort started in 1997 with the Heart of Maine RC&D piloting its first course in central Maine while the University of Southern Maine was doing the same in southern Maine. In 1998 the partnership was in full swing with plans to expand the training. With the successful completion of training at ten sites, the partnership once again expanded . The 1999-2000 plans offer the training in four more locations. The expansion also brought about the training of additional instructors which now numbers twenty, statewide. To date, twelve classes have been completed and 236 small businesses have completed the training.

INGREDIENTS OF SUCCESS

The characteristics of the Maine FastTrac program that creates success are:

- o Grassroots Coalition Building
- o Quality Instructors
- o Networking/Mentoring
- o Classes made up of diverse businesses
- o Quality Training Material
- o Evaluation

COSTS TO DELIVER THE TRAINING

The experiences of the partnership show that the cost to administer and deliver FastTrac New Venture is approximately \$10,000. Tuitions generated from participants is about \$4000. FastTrac Planning costs about \$14,000 with an income of \$6,600. Tuition income assumes a class of twelve in both cases. The tuition for FastTrac New Venture is \$349 and \$549 for FastTrac Planning. Differences between expenses and income in order to sustain the training program must come from communities, coalitions, larger classes or other support such as corporate sponsorship and/or grants.

WHAT FASTTRAC GRADUATES HAVE TO SAY

One graduate said: "I can't begin to tell you how helpful FastTrac has been. It was fast paced, no added useless fluff to take up my time, extremely well organized in easy to use steps".

Another said: "...as a matter of fact, the market was ready and we had to start building before the loan actually went through. The bank started advancing me money on the loan I would be getting. That's how much FastTrac pushed it along".

Another Graduate said: "From the first presentation, through the eleven weeks of classes and especially as time goes on, I realize the course has been nothing short of revolutionary for me!"

Vaughn Rasar is an employee of the USDA Natural Resources Conservation Service in Maine

Record Keeping for the Small Farm - a Farm Management Specialist's Perspective

Miles D. Robinson

Tuskegee University
Tuskegee, Alabama

There is no substitute for good records. Not only do good records provide information on the amount of income and expenses, but they also provide a view of trends that help management make better decisions. The importance of record keeping can't be overemphasized. Records help farmers understand the financial risks involved in their farming operation. This presentation will highlight the basic components of financial risks and how they relate to the day-to-day management of the farm operation.

It is generally known that a set of well-maintained financial records is an absolute necessity to maintaining financial control of a farm or ranch. You have to have the information and tools needed to evaluate past performance and in planning for future accomplishments. Even though comprehensive financial records do not provide total financial risk management, they do provide much of the information needed to understand critical financial risks.

This presentation will also highlight the need for solid record keeping. Good records provide for the development of essential financial management tools, such as the balance sheet and statement of owner's equity, income statement, and projected and actual cash flows. Failure to plan is planning to fail. This will also be illustrated through discussion of the benefits of good record keeping such as:

- Information to complete federal and state income tax returns and W-2s.
- How much money you received.

- How much it cost to operate the farm business.
- How much it cost your family to live.
- What and how much you produced and whether you made money or lost money. Whether or not the amount produced was as much as you had planned.
- What you spent to keep up and improve your farm.
- The amount paid on debts and the amount still owed.
- Any changes that you need to make to improve your farm operation.
- Information for lenders to make the right credit decisions.
- Which enterprises brought in the most money.

Managing Risk for Success

Randall Schwake

Security State Bank

Claremont, MN

I am here today to talk about managing risk for success. I will present it from a lender's perspective in order to give you an inside look at what goes on and is going on in the lending business today. Knowledge is power. If you know more about your lenders it will help you deal more effectively with them.

Background:

President of a rural bank with two branches in southeastern Minnesota. 30 minutes from Rochester.

Total assets of \$22 Million.

Part of a bank holding company that controls 5425 Million in bank assets.

We have a rural focus.

I have been in the finance business for 25 years.

Farm Credit System 1975 to 1982

Regional bank from 1982 to 1988

Took over a failed rural community bank in 1988 and have been in community banking ever since

I would like to frame my presentation by going back to August of 1981.

The prime interest rate just hit 20.50%

This represented almost a 100% increase from the same month a year earlier when the prime rate was 11.12%.

Land values reached their peak at \$1,941 per acre in southeastern Minnesota that same year.

We had just come from a period of time when:

It was being said that we had reached a new plateau in commodity prices.

Land prices and rents had increased significantly. People were saying, "They only make so much land you better buy now. Leverage it, it do whatever it takes to control it because it will never be cheaper."

Lenders were anxious to lend money.

Spending for new equipment and capital improvements was up.

Many lenders and producers were ignoring reasonable long-term projections for yields and prices.

Input costs were increasing and gross profit margins decreasing.

There were price support programs in place.

The turkey and chicken industries were vertically integrated.

Farms were being consolidated.

Let's turn the clock ahead a little to July of 1988.

It is 3:45 in the afternoon and the lobby of the bank has just closed.

The FDIC is inside notifying the ownership, management and staff that the bank has been declared insolvent and is being closed and the assets sold.

I am standing outside a rural bank in Blooming Prairie, MN with the new owners.

The FDIC notifies us that we can enter the bank.

We have a staff meeting notifying the executive officers of the bank that they no longer have jobs and the rest of the staff has to reapply for their jobs.

The next day we open under a new name and a state bank charter.

The media is there. It is a big deal that another rural bank has failed.

It was a time of emotional hysteria, militant defiance and contentious relations between lenders and borrowers

Now the prime rate is 9.29% and average land values in southeastern MN have dropped to \$782.

Farms are being consolidated.

Now it's October of 1999.

The prime rate is 8.25% and average land values in southeastern MN are \$1,567.

We have Roundup ready beans.

Exports have the Asian Flu and other areas such as South America have created competition that will be hard to beat because of their cost structure.

Machinery sales are declining.

The EU is refusing delivery of certain GMOs.
Protesters are trampling and burning plots of genetically modified plants.

Lenders are still anxious to lend money.
Profit margins are shrinking.

County board meetings are crammed with people opposed to farmers putting up livestock facilities because they will ruin the quality of life in rural America.

Landlords are waiting to see what kind of farm program there will be before they sign contracts so they can get the most rent possible.

The government is still involved in subsidizing agriculture through LDP payments in spite of the Freedom to Farm Act of 1996

The hog industry has been vertically integrated and we're working on dairy.

DuPont has purchased controlling interest in Pioneer.

Monsanto is a takeover target.

Cargill has purchased Continental Grain.

Biotechnology is the buzz.

Farmers are using satellites to farm.

Farms are being consolidated in record numbers.

Processors and agricultural service providers are being consolidated

What were the risks in 1981?

Global politics (The Grain Embargo)

Interest rates o Government policy

Weather o Market

Character

Health of the principal operator

Lack of understanding of the fundamental changes going on in the industry

Life was simple then. Risk was easier to analyze.

What are the risk factors today?

Global production affecting supply and demand.

Consumer attitudes and acceptance of our production (ie, GMO issue, Bovine Growth Hormone, Mad cow disease, e. coli bacteria outbreaks)

Local policies regarding feedlots

Compulsive gambling or spending

Consolidation of processors

All the other risks that existed before

Risk management is defined as, "Procedures to protect the assets of a business or its potential for future profit against possible losses or to minimize losses if they

occur, especially in the reference to a specific venture or undertaking."

If lenders and farmers had managed for interest rate risk when 1981 the farm crisis maybe wouldn't have been a crisis. What if farmers had locked in their interest rates on their term and real estate debt and were operating on their own cash to put in the crops instead of being leveraged to the hilt? How could we expect the farmers to know when the lenders didn't even know. Look at the savings and loan debacle that followed. They got in trouble because they took depositors money in the form of short term certificates and savings accounts and lent it out on long term fixed rate mortgages. Their cost of funds went crazy and they couldn't do a thing about it. What if interest rates went up significantly today? What would things be like?

The increase in interest rates precipitated the decline in land values that followed. If a lender had loaned 80% of the peak value of land in 1981 the debt per acre would have been \$1,552. Seven years later that same land was worth \$782. Those balance sheets didn't look very good and the loans didn't look good. Who would have known? Did the lenders know? Obviously not! Did the borrowers know? Obviously not! Then who's fault was it? We needed to blame someone. So everyone blamed each other and that's when things got bad. That is when the lenders should have sat down with their customers and laid out a strategy to dig out. In order to dig out they needed a very strong and well disciplined risk management plan. There had to be trust between the lender and borrower but unfortunately most of that had disappeared. Those that were fortunate enough to have a good lender and a good relationship were able to work together and work their way out.

In time land values increased, prices increased which improved profitability and many of the wounds on the balance sheets healed up. The unfortunate thing is that there are a lot of souls of the poor farm families that were forced to leave farming that are wandering the farts fields today. They didn't understand what they needed to do and didn't have a lender that understood either. That doesn't need to happen if you position yourself and manage risk.

I have found that farmers don't like to meet with their lenders. I had one farmer say that coming to see me was like going to the dentist. In order to deal with lenders it helps to understand who they are and why are they so

concerned about what can grow wrong.

Things you need to know about lenders:

Lenders are in business to make money

Lenders are not philanthropic

Lenders enjoy making loans

Lenders enjoy seeing their customers succeed

Lenders do not enjoy collecting loans

Lenders don't ask for financial information to make your life miserable

Lenders have families and hobbies like fishing and biking just like other ordinary people

Lenders take themselves too serious once in a while

Lenders don't like surprises

Lenders appreciate good communications

THINGS YOU SAY THAT SCARE LENDERS:

Thank you for the loan, I don't know how I'll ever repay you.

The bad news is I can't repay my loan this year. The good news is it looks like I'll be with you another year.

I need the money because I wrote the check.

How could I be out of money I still have blank checks.

I just got hauled out and I don't have insurance.

I need a loan for another bin because I still have last year's beans.

Lenders have the responsibility to keep their institutions solvent. They will not be around nor will the institution be around if they make a lot of loans they can't collect. Banks are highly leveraged (7-15% capital) and make money on funds entrusted to them by depositors. The regulatory agencies make sure that the banks are not jeopardizing the safety of the depositors money and the money in the FDIC insurance fund so they watch them very closely. Most of the assets of an average bank are loans.

Rural Business and Cooperative Services' Role in Supporting Small and Beginning Farmers

Jeff Jobe

Director of Cooperative Services
Rural Business and Cooperative Services
Des Moines, Iowa

USDA Rural Development's Rural Business and Cooperative Services was created during the 1994 reorganization of USDA. This reorganization consolidated the non-farm programs of Farmers Home Administration (FmHA) with the Rural Electrification Administration and the USDA Agriculture Cooperative Service. The Rural Business-Cooperative Service mission statement is to enhance the quality of life of for all rural Americans by providing leadership in building competitive businesses and cooperatives.

Cooperative Services accomplishes this mission by:

- Providing information, services, and educational materials relating to cooperatives
- Conducting research on activities pertaining to cooperatives
- Responding to requests for assistance from farmers who want to organize a cooperative, or from directors of existing farmer-owned cooperative seeking to improve operations
- Collecting and disseminating cooperative statistics that identify and support research and technical assistance

Rural Business Services accomplishes its mission by providing financial assistance in the forms of:

- Business and industrial loan guarantees
- Cooperative stock share loan guarantees

- Direct business and industry loans
- Rural economic development loan and grants
- Rural business enterprise grants
- Intermediary relending loans

In Iowa, Rural Business and Cooperative Assistance has allowed for the development and continued operations of the following cooperatives:

- Southwest Iowa Egg Cooperative, a 1 million hen layer operation
- Southwest Soy Cooperative, a small soybean processing plant
- Sunrise Energy Cooperative, a 5 million gallon per year ethanol plant
- Iowa Turkey Growers Cooperative, a turkey slaughter and processing plant
- Heartland Organic Marketing Cooperative, a marketing cooperative, exporting organic soybeans to Japan
- Green Meadows Hay and Forage Cooperative, a hay marketing cooperative

We feel that many opportunities exist in rural America, and we at USDA Rural Business and Cooperative Services are there to help.

Cooperative Marketing of Alternative Meats in the Mid-Atlantic Region

Jennifer Thorn

Registered Dietitian & Extension Educator

University of Maryland Cooperative Extension, Mt. Lake Park, Maryland

A Small Meat Animal Project was initiated in Garrett County, Maryland, to assist agricultural producers in developing niche markets for alternative meat products in the Mid-Atlantic region. The project was implemented by Maryland Cooperative Extension with funding from a USDA Rural Business Enterprise Grant.

The intent of the program was to provide opportunities for rural rabbit and goat producers to enhance their household income levels. Long-term success for these small producers hinged on cooperative efforts in production and marketing of their products. Mt. Pride Cooperative was formed to enable producers to collectively market their meat products. Using this cooperative approach allowed for more control in managing the production, processing, packaging, and marketing of the USDA-inspected rabbit meat.

An agreement was made between the cooperative and a small processing facility to process the meat for retail sale. Market outlets were established with distributors to supply major retail chains. While Garrett County

remains the principal business hub, this project expanded to producers from Maryland, West Virginia, and Pennsylvania. This increased agricultural production has established a sound foundation for a long-term small meat animal industry and has provided additional business revenues and jobs in a local economy that has suffered setbacks from economic downsizing.

Planning Now for Future Generations of Small Farmers

James L. Gibson

President and CEO, Wisconsin Agribusiness Council, Inc.
Madison, Wisconsin

Growing disparity between "large" commercial farm operations and shrinking relative sizes of other production agriculture entities leads to both reality and misconception. Some assume that there is no future in farming because they believe that the capital requirements are impossibly out-of-reach.

We forget that young people have an advantage that older people do not - they do not know the word "impossible." Most operators of farms in the future will begin "small." They are the ones who will decide whether they will grow "big" or focus on their advantages as "small farm" operators. Many of today's giants on the Fortune 400 richest people list are younger than 35, some in their 20s. They have distinguished themselves by recognizing opportunities, taking risks, recruiting oth-

ers, and doing something very special very well. This session will focus on opportunities for a new generation of small farmers and the means to systematically nurture entrepreneurial resourcefulness, creativity, and leadership behavior.

Planning for the Next Generation of Farmers: Short-Term Initiatives, Paradigm Shifts, and Real-Time Impacts

Sue Ellen Johnson

Coordinator for the Northeast New Farmer Network

The Northeast Beginning Farmer Initiative is a two-year project funded by the Mid-Atlantic Consortium of the Kellogg Foundation and USDA-SARE. The project is creating a Northeast New Farmer Network for beginning and prospective farmers and service providers.

Our project approaches farm careers and agricultural production as a profession. It targets small-scale, commercial, professional, profit-oriented small farm start-ups throughout the 12 Northeast states. It understands that farming is a resource and a management-intensive enterprise.

The network will identify training resources and training gaps, financial management and land acquisition strategies, and the necessary skills and possible career paths for successful agricultural production careers and enterprises. Pilot projects will create business planning and marketing tools for new farmers.

The project is also looking at innovative strategies to transfer farm expertise and experience - as well as active farm operations and farmland - from one generation to the next. The project is developing apprenticeships and new farm partnership models, linking new farmers with retiring farmers to transfer expertise and keep farms operational. A regional network (Web site and referral directory) will provide the best information for new and prospective farmers in the Northeast on acquiring land, credit, markets, mentors, and production skills.

The Northeast New Farmer Network and other beginning and small farmer Initiatives will be most effective in a technology, services, and market and policy environment that recognizes the importance of small farms to our economy, environment and food system.

Land Retention Project

Edward (Jerry) Pennick

Federation of Southern Cooperatives/Land Assistance Fund
East Point, Georgia

The Federation of Southern Cooperatives/Land Assistance Fund (FSC/LAF) was founded 32 years ago, in 1967, and currently has projects in five Southern states (Georgia, Florida, South Carolina, Louisiana, and Mississippi). Limited assistance is also provided in other parts of the South.

FSC/LAF is committed to assisting rural communities to be self-sufficient and self-sustaining. This mission is achieved through educating communities in various areas. FSC/LAF organizes credit unions, local businesses, and cooperatives, as well as trains farmers on environmentally friendly techniques.

One particular focus of FSC/LAF is in the area of land retention. Since the turn of the century, loss of land owned by blacks has been documented time after time. In 1982, the United States Commission on Civil Rights reported that much of the land loss experienced by minorities in rural communities was due to racial discrimination. Racism was and is an integral part of the land acquisition and retention structure in this country.

In 1969, there were 87,000 black farmers who owned more than 6 million acres of land. That number had dwindled by 1992 to a measly 18,000 farmers who owned 2.4 million acres. Minority landowners were losing land at a rate of 1,000 acres a day.

At that rate, blacks would have been landless by the year 2000. FSC/LAF has employed a comprehensive strategy aimed at preventing that prediction from becoming a reality. The strategy is implemented through FSC/LAF's Land Retention Project.

The LRP is primarily focused on four Southern states: Alabama, Georgia, South Carolina, and Mississippi. Although those states comprise the main target area of the LRP, we provide technical assistance and aid to other states such as Texas, Louisiana, and Florida.

The purpose of the LRP can best be explained in five comprehensive statements:

- To educate community organizers, staff, paraprofessionals, and community leaders about recurrent land loss issues. FSC/LAF has been fortunate throughout the past 32 years to align itself with many dedicated and sincere volunteers from around the nation. The LRP educates these individuals about the most prominent and recurring problems that landowners face. These volunteers are familiar with their community and understand its needs and concerns. They serve as the community's information source and referral agent.
- To facilitate information flow to minority landowners by publishing and distributing generic legal information about major land loss issues. Through a series of relationships that FSC/LAF has built with attorneys, law schools, and legal professionals, the LRP helps devise and distribute general, easily understandable materials so that landowners can begin to understand their rights and responsibilities as landowners. This information is in the form of a series of pamphlets entitled "What Every Landowner Should Know About the Law."
- To assist landowners in locating competent legal assistance when necessary. Through education and information we can prevent landowners from needing to hire attorneys by helping them become proactive rather than reactive. But in the event that a landowner needs to consult a lawyer, FSC/LAF has established relationships with attorneys who will take land cases sometimes at a reduced fee.
- To educate the landowner about techniques to protect his property. Even though much of the dispossession of black land has been caused by discrimination and unscrupulous dealings, some land loss can be attributed to landowners who failed to maintain and control their property. Landowners should know when their taxes are due, how much their land is worth, and whether there are any liens or encumbrances on their land. The LRP assists landowners in this respect by teaching them where

and how to find important property information, and how best to maintain ownership and control of their property.

- To inform the community about land-related issues. The LRP holds workshops, drafts articles and press releases, and publishes a newsletter - all aimed at keeping the community updated and involved in land-related issues.

These five statements combined provide an efficient skeleton through which the body of reduced land loss can be built. Education, information, communication, and personal responsibility form the foundation of the Land Retention Project.

Working to save land for the past 32 years has been an enormous challenge. Landowners often do not have the resources to legally defeat wealthy developers, public officials, and lawyers who desire their land. Five areas, in particular, have caused landowners severe grief. These areas are by no means comprehensive of all the legal issues that landowners might encounter, but they have, by far, become the thorn of dispossession in the sides of landowners throughout the South.

The LRP refers to these five areas as its Five Point Thrust: Tax Sales, Wills and Estate Planning, Adverse Possession, Eminent Domain and Condemnation, and Mineral Rights. The LRP helps the landowner acquire a working knowledge of each of the above areas so that he or she can make timely and correct decisions concerning his or her land and, when required, chose an attorney who can adequately represent his or her best interest.

The Federation of Southern Cooperatives/LAF is committed to reducing the amount of land loss by blacks in the South and is the premier organization in this area of concern. The Federation has a dual mission of land retention and land-based economic development. If we can educate the black community about the law, then we are convinced that we can turn the tide on statistics that say blacks will soon be a landless people.

The Revolution and Evolution of On Farm Research in Montana

Jan Tusick

AERO Farm and Ranch Improvement Clubs
Montana

In 1990, the Alternative Energy Resources Organization (AERO) started a program designed to help agricultural producers in Montana learn how to farm more sustainably in this semi-arid region of mostly small grains and beef production. The land grant universities didn't seem very interested in helping prepare people for a sustainable future, and the farmers in AERO's membership already knew what questions they wanted answered. So AERO put the word out in the general agricultural community that it had money to give local groups of farmers and ranchers for projects they would design to help them learn about sustainable agriculture.

AERO* farmers took charge of on-farm research when agricultural institutions and organizations in Montana refused to support sustainable agriculture and communities. These farmer visionaries created a program (Farm and Ranch Improvement Clubs) that is a state and national model. AERO's program began with six farm improvement clubs made up of about 35 families. Today about 175 farm families in 17 clubs spread across Montana are learning about different aspects of sustainable agriculture that they have chosen.

Over and over club members report a shedding of their feelings of isolation, and sometimes embarrassment, that often come with breaking from convention. As Clint Peck, editor of the Montana Farmer-Stockman observed, "I think a lot of that has to do with people sharing ideas and realizing you're not a fruitcake if you're out there trying to do something from a standpoint of conservation, because people are working together. It is a lot easier to do things if you've got two or three people to support you."

Besides providing a sense of community, the program is a catalyst. The grants of up to \$800 each are enticing producers to move from thinking about an experiment to doing it. AERO also provides each club with technical and organizing assistance, farm tour organizing and publicity. Staff also serves as the hub of the club network, facilitating inter-club communication and learning. AERO hosts an annual face-to-face gathering of all the clubs where they describe what they're

doing and learning, what problems and barriers they've run up against, and what new questions are emerging.

The program is able to accommodate tremendous diversity - in people, geography, and project goals and activities. On-farm research or demonstration is only one approach clubs are taking. Some clubs are pursuing market research and development; one formed a marketing cooperative in 1992. Another club is teaching itself and the local community about Holistic Resource Management.

Over the past 10 years, 150 clubs involving over 500 farm and ranch families have done research on-farm practices, marketing, processing, consumer education and ways to add value to their crops.

Clubs are self-initiated, organized and led. They have proven to be a powerful way of promoting institutional, social, policy, and leadership changes. Many of the clubs are providing opportunities for the public to see and learn from what they are doing. Public events hosted by clubs include farm tours and field days, workshops and seminars. We'd have never started our group if it wasn't for this AERO project, and we've acquired some fairly useful data that we've collected ourselves," said grain and cattle producer Bud Barta, from Lewistown, Mont. "We know how [a practice] actually works on our own farm, rather than how it works at the university or at the experiment station. We have direct hands-on experience with the data so we have more confidence in it, I think. I'm real happy we've been able to share and learn from everyone else, too," Barta added.

Each club is as unique as its research ideas but designed to discover local solutions to problems participants have identified that are related to farm and community sustainability. This program demonstrates how the hope and vision of a relatively small group of individuals can change their lives, farms and communities.

* Alternative Energy Resources Organization

A Training Series in Organic Farming Systems for Cooperative Extension Service Agents

Nancy Creamer

North Carolina State University
Raleigh, North Carolina

Consumer demand for organically produced food is increasing by more than 20% per year. At the same time many farmers are seeking biologically based methods to farm according to organic standards.

These trends point to the need for the land-grant university system to provide research-based information, applied research, and Extension programming to support organic growers and organic farming enterprises. Generally, organic farmers view the land-grant university system and the cooperative Extension system as unwilling to acknowledge these needs and unresponsive to them. The Extension community answers that the primary reasons for any "perceived" unresponsiveness to demands for information relating to organic production practices and enterprises are a lack of adequate training and the paucity of available research-based, resource materials.

In 1998, grant money provided by the USDA SARE Professional Development Program and the NC Cooperative Extension Service made possible an intensive training in organic farming systems for North Carolina Cooperative Extension agents. More than 50 agents participated in a series of workshops that were offered as "in-service training" and as a graduate-level NC State University course worth 4 credits.

The Organic Unit at the Center for Environmental Farming Systems (CEFS), a 100-acre facility dedicated to research and education in organic farming systems, served as a home base for the training activities. These training activities consisted of lectures, "hands-on" demonstrations, discussions, field trips, and class exercises.

Primary topic areas included: organic nutrient management, soil biology/ecology/quality; crop rotation; composting; cover crop management; organic weed, insect, and disease management; conservation tillage; organic greenhouse vegetable production; marketing organic produce; integrating animals into organic crop production systems; delivery systems for disseminating information to organic producers; and social and community devel-

opment aspects of sustainable agriculture. Unique features of the workshops were an interdisciplinary team-teaching approach, and an integration of information about interactions among production practices.

This well-received training program will serve as a model for future Extension training. A training manual, slide sets, Extension publications, and an organic farming web site are being created to provide agents with the resource materials they need to conduct county-based educational programming in organic production systems and enterprises.

Ten Points to Effective Partnership Between Farmers and Organic Consumers

Debbie Dunbar Ortman

National Field Organizer
Organic Consumers Association
Duluth, Minnesota

I am pleased to be here today to share my perspective on the importance of organic farming from an organic consumer's perspective.

Many of you who have been providing services to farmers will no doubt agree with me that 10-15 years ago integrated pest management was considered radical. Now it has become the norm for conventional farmers. I predict that organic farming will become the "norm" within the next 15 years.

Over the past 10 years the organic movement has grown throughout the world. Here are some facts:

Fact: U.S. sales of organic foods have grown between 20-25% annually for the past 7 years, with overall sales of between \$3.5 and \$4.2 billion.

Fact: Once a small minority, there are now more than 10,000 certified organic farmers in the U.S. and that number is growing each year.

We are all concerned about small family farmers being forced into bankruptcy. Organic farming is a viable option.

What can each of you do to help organic farmers? I have compiled a list of 10 key points that can help build an effective partnership between organic farmers and consumers.

1) Know what organic consumers want:

- Organic consumers want fresh organic produce that is locally/regionally grown.
- Organic consumers want to know who, what, where, when:
 - who grew their food
 - (what) how their food was grown
 - where their food was grown
 - (when) how fresh is the food
- Organic consumers want certified organic foods.
- Organic consumers want great taste, lots of variety, and quality foods.
- Organic consumers are willing to pay a higher

price.

- Organic consumers are informed and are demanding safe food.

2) Know what organic farmers needs are, their philosophy, and their growing practices. Spend a day with an organic farmer and learn first hand. There are some organic farmers here for this conference - learn from them. When you go back to your community, they are a wealth of information. You can't help an organic farmer until you understand why they choose to farm organically - free of pesticides, sewer sludge, chemical fertilizers, GE seeds, etc. Once you understand their philosophy and growing practices, then you can help them with their needs - marketing, planning, etc.

3) You can help organic farmers develop partnerships with consumers. There are many opportunities to connect farmers directly with consumers:

- Community Supported Agriculture - CSA's
- Farmers markets
- You-pick farms
- Farm tours
- Schools and churches
- Coops and health food stores

4) Help organic farmers find markets for their crops and produce:

- See #3 above
- Focus on local/regional markets - keeps transportation and storage costs down
- Help locate collectors/processors/distributors/wholesalers

5) Help sponsor and promote organic farming:

- Local/regional harvest festivals
- Organic booths at county fairs
- Forums/discussion groups/conferences
- Regional farming associations
- Training seminars

6) Help promote organic food consumption. Educate consumers about the positive reasons to buy organic food. See 10 reasons to buy organic.

7) Help develop, research, and promote resource guides and brochures (see examples).

8) Help farmers make the switch from IPM to organic. It is possible!

9) Help farmers get certified:

- Locate appropriate certifiers.
- Minnesota's new cost-sharing program. The MN legislature passed a bill this past spring which set aside \$35,000 to help defray the costs of certification for organic farmers and to set up an Organic Advisory Task Force, of which I am a member, to oversee the cost-sharing program and to advise the MN Commissioner of Agriculture on organic farming issues/policies.

10) Why help organic farmers?

- It helps rural economies/communities.
- It helps support small family farms.
- It helps the environment - organic farming is sustainable.
- It provides healthy foods for our children, our families.
- It has a positive human health impact.
- Consumers are demanding certified organic foods
 - it all comes down to supply and demand.

IT IS A WIN/WIN TEAM - ORGANIC FARMERS
AND CONSUMERS!

The Use of Paraprofessionals in the Delivery of Extension Programs In Texas

Nathaniel Keys and Ronald Kelley

Cooperative Extension Program

Prairie View, Texas

A unique feature of the Cooperative Extension Program headquartered at Prairie View A & M University at the time of its inception in 1972 was the use of paraprofessionals or program aides serving as catalysts in motivating and assisting hard-to-reach audiences to become aware of and adopt new, and improved practices for self-improvement. The key factor to this program was the employment of local residents as program aides who were recognized for their ability to work effectively as a team with the target audience. Paraprofessionals continue to be used in the Cooperative Extension Program in Texas, but as these individuals retire or move to other jobs, vacancies left by their departure are being filled by professional workers.

Bringing New Farmers to Your Community

Calvin Graber

Ag Stewardship Committee of the Salem Mennonite Church
Freeman, South Dakota

The Ag Stewardship Committee of the Salem Mennonite Church of Freeman, SD, was organized when the agricultural crisis of the 1980s and highly inflated real estate prices in the local area during the early 1990s created a situation where beginning farmers faced difficult, if not impossible, odds of establishing a viable farming operation.

The committee consists of experienced, successful, middle-aged farmers who are each assigned to personally mentor two or three beginning farmers. This process allows the beginning farmers to benefit from the experiences of the established farmers and share the frustrations associated with the establishment of a new operation.

tion.

Secondly, the committee has arranged a collateralized loan program with two agriculturally based banks in the community. Beginning farmers have the opportunity to borrow against certificates of deposits volunteered for this purpose by older or retired farmers in the church. Finally, the committee annually hosts a Sunday evening panel discussion for the whole community on subjects such as intergenerational transfer of the family farm, conservation practices, involvement in cooperatives, etc.

Bringing New Farmers to an Area and Providing Assistance to Them

Richard Molinar

University of California Cooperative Extension
Fresno County, California

My discussion will address how to assist two general groups of "new" farmers:

- farmers who are literally new to the country, to a particular area, and/or to the business of farming, and
- farmers who can be considered new because they have not become familiar with the services and resources available to them.

BACKGROUND

The focus of this presentation will be on the Hmong farmers from Laos, though the application to other groups is certainly valid. Since 1976 many new farmers have immigrated to Fresno County from the country of Laos, resulting in about 1,000 new farmers to the area. Several subgroups from this small country, namely Hmong, Lao, and Mien, chose Fresno, California because of the significant reputation for farming in the county, the climate, and the lower cost of living compared to other areas. Each of the three groups has its own distinct language, very little exposure to modern agricultural technology, and in general very little formal education - most less than an eighth grade education.

Fresno County is in the heart of the Central Valley of California. It is the number one agricultural county (in total production value) in the state and the nation and has more small farms and more minority farmers than any other county in the state. The methods below have helped to attract and/or assist new and established farmers to Fresno County.

METHODOLOGIES

Many small farmers have neither the time nor the resources to attend meetings or to research new technologies that may help their operation. Some of the techniques offered below have proven successful, although it is important to note that any given technique may work better for one group than another. There is no one technique that is "the best" for all groups.

FIELD VISITS AND SERVICES OFFERED

Though the least efficient method, field visits are still probably the most effective. They provide for one-on-one assistance and result in excellent transfer of knowl-

edge. Once you have gained the trust of the farmers they generally start coming to meetings more often and coming to you for help.

"Gadgets, gismos, and attention getters" are a good way to get your foot in the door and/or germinate interest in a subject:

- a) Free hand loupes. For 60 cents apiece this is a very inexpensive way to get farmers interested in pest ID. For this price you can also get them imprinted with a logo, name, or farming practice (i.e. integrated pest management) and your phone number. This has been very successful in Fresno County and has encouraged farmers to start identifying small insects such as mites and thrips.
- b) Free basic soil tests. For about \$100, an Extension agent can purchase a pocket pH and salt conductivity meters to provide two quick and simple tests for the small farmer. It is an excellent way to develop farmer interest in soil chemistry and its importance to plant growth. It also provides a way for the agent and farmer to connect. We advertise this on radio and at meetings. When farmers bring in the soil samples we can run the tests in less than 10 minutes.
- c) Free "nitrogen quick tests." The farmers can perform these themselves, and we instruct them in the technique.
- d) IPM pamphlet guidelines for specialty crops (including chemical registrations).
- e) Pest insect-weed-disease diagnosis service. Most universities are able to provide this for the Extension agent. Certainly this is a valuable service to the grower. During my travels in the county last month I encountered a new Chinese grower I had not met before. I noticed his new planting of Jujube trees. A half dozen or so were wilting and turning yellow on one side, so I offered to take samples and send them off for a diagnosis.

RADIO AND TELEVISION OUTREACH

Depending on the group, this methodology can be

extremely successful. Radio broadcasts, in their native language, have been particularly successful with the Hmong farmers for several reasons:

- They are new to the United States and have a great desire to learn.
- They have limited English language skills.
- There are very few other Hmong radio and television stations, so a large number listen to the one radio station. Hispanic radio outreach, while still quite good, does not have the same dramatic impact.

Cooperative Extension partnered with USDA-Farm Service Agency to purchase 30 minutes of air time, at the same time each evening, bimonthly. Consistency is very important; having the regularly scheduled times is more important than utilizing free public service broadcast time. A script is developed for each show to discuss important issues for small farmers from the two agencies, and 10-15 minutes is left for call-in questions from listeners. Ideally the show should be conducted or translated by someone fluent in the language of the targeted group. Next to one-on-one field visits, this has been the most successful outreach methodology. Phone calls into the office have increased 500% during the past 18 months, from 5 calls a week in the beginning to 5 or more calls in a single day.

Many cannot even read Hmong well enough to understand technical terms. Therefore visual and audio media are much more effective with this clientele in Fresno than the print media (newspaper, newsletter, magazines). We have some excellent publications regarding pesticide safety in 4-5 languages, but they are not used as much nor do they have the same impact as the video-cassettes and radio program.

BILINGUAL ASSISTANCE

This technique is very valuable and combined with the above techniques makes the outreach mechanism synergistic. In areas where there are large populations of minority farmers and English is not their native language, having someone able to communicate with them in their language is very important. I have taken Hispanic farmers to meetings presented in English and while they were able to understand about 80% (seems high), the 20% they missed were important key points that were critical to the meeting of goals and objectives. So I am able to help them with the parts they did not understand.

Our office has employed a Hmong field assistant for the past 6 years on a full-time basis. He has played critical roles in translating written meeting announcements and county and statewide publications; interpreting at meet-

ings, during field visits, and for office walk-in clientele; and in helping to develop pesticide safety video and audio cassettes.

EDUCATIONAL MEETINGS

It is often difficult to get small farmers to attend meetings/workshops because of time constraints and simply getting the word out. But there are some things that have helped our programs:

- Evening and/or Saturday meetings
- Translation, if needed or required
- Approved continuing education (California now requires 2 hours annually for those farmers applying restricted materials)
- Collaborators and partners.

These are extremely useful and practical techniques. We have conducted joint educational programs with:

1. industry groups including local packing houses, seed and chemical companies, and strawberry processors,
 2. community organizations such as Hmong American Community and Lao Family,
 3. state and county agencies such as Economic Opportunities Commission and California Department of Agriculture,
 4. USDA agencies including Natural Resources Conservation Service, Farm Service Agency, and Rural Development,
 5. educational institutions such as state universities and community colleges, and
 6. non-profits such as American Farmland Trust.
- It is also very helpful to work with legislators and other government officials (e.g., Assemblyman Cal Dooley and Undersecretary of Agriculture Gus Schumacher).

Cooperative Extension and Reedley Community College have conducted a very successful market bus tour for Asian farmers for the past two years. The farmers visited terminal markets, farmers markets, wholesale markets, and retail markets in the San Francisco and Los Angeles regions.

To determine which of the techniques will be most productive, it is important to get to know the clientele and community leaders. We started a "Small Farm Resource Network" committee one and a half years ago to bring together agencies and groups that provide some type of assistance for small farmers. Currently, about 25 different groups meet together quarterly to discuss outreach, research needs, underserved groups, and possible collaborations, which in the end will hopefully make outreach to small farmers more effective and efficient and reduce duplicative efforts.

Access to Land: Farm Linking to Help New Farmers

Kathryn Z. Ruhf

New England Small Farm Institute

What is the problem? There are twice as many farmers over 60 as under 35 (USDA/ERS). 20% of Iowa farmers will exit farming over the next 5 years. 70% of farms will transition in the next 15 years. In some regions, prime farmland is being converted to non-farm uses; in other regions, farms are consolidated. It is less likely that the next generation of farmers is coming from farm backgrounds; they will come more from non-farm backgrounds. There are considerable barriers for new farmers to enter farming:

- access to land
- access to education, training and technical assistance
- access to credit and capital
- access to markets.

The focus of this presentation is on access to land. However, getting onto land is necessary but not sufficient to assure a successful new generation of family farmers.

- What will it take to encourage a new generation of family farm owner/operators??
- beginning farmers are likely to start small; they are part of the small farm agenda

The barriers to accessing land include: - locating it - choosing appropriate tenure model - negotiating the transfer - securing necessary financing Entering farmers need to connect with exiting farmers. Exiting farmers often do not have viable transfer plans in place. Upon retirement or death, they or heirs of farm owners want quick out, usually selling, or seeking cash rent, typically from neighboring farmer. This increases size of farm, and decreases opportunity for new farmers. Cash rent needs 3-4 times the financial backing, and absorbs all the risk, compared to crop or livestock share or other shared risk arrangement. In urbanizing areas, upon retirement or death, pressure is enormous to sell to development. The word tenure comes from TENIR: "to hold".

There are many ways to hold farmland: you need access, security, redemption of equity, and clear articulation of rights and responsibilities. Tenure arrangements need to consider: rights and responsibilities rather than title; personal and family values (e.g. is land a means of production or investment vehicle for accumulating

wealth?) and preferences; long range planning also: full vs part-time, mentor transition vs. entrepreneur, profitability and debt (what can your enterprise carry), cash flow vs collateral Kinds of tenure models: (each has pros and cons) - purchase (farmland cannot pay for itself) - rental (usually annual, not more than 5 years: implications) - long term lease - farm manager/employee - work-in Transferring the land, transferring the business: farming is a combination of business assets, plus personal holdings. Transfer plans use multiple tools: business arrangements, insurance, contracts, etc. Arrangements can change over time. It's important to get in writing and update the plans regularly.

Transfer planning can be fraught with interpersonal, financial and legal considerations, among family members and between generations, and between unrelated parties. Exiting farmers need transfer plan in place: needs to begin when farmer is in 40's: - business planning - retirement planning - transfer planning - estate planning. Farmers don't do sufficient transfer planning, which leads to last minute, poor decisions. The process needs family involvement early and often. Often TA providers are not knowledgeable about all aspects, nor about more innovative approaches to transfer and access. Farm families need a TEAM to be on the same page. Transfer is a process, not a point in time; plan needs to encourage transfer of assets over time: most liquid to least liquid.

Also, transfer is NOT just about money: There are other values and goals There are now sixteen Land Linking programs serving 25 states. In this presentation, I described New England Land Link, and the National Farm Transition Network. Issues and considerations. We need new tenure models. They must be: - regionally appropriate: conservation easements in some locales, CRP land in others - models that provide alternatives to borrow and buy - models that enable transfer of knowledge - models that encourage non-ownership options - models that share risk Policy ideas include: USDA guarantee cash rent payments, apply risk management concepts and strategies to transfer situations; provide technical assistance and resources to promote better transfer planning Working with exiting farmers, one must address whether the farm is viable; can it support two

families during transition? Policy and program ideas: in Nebraska, they exempt the first \$20k lease income from taxation. States could require or give bonus to PDR application that has a transfer plan in place. We could encourage breaks between generations: lease or ownership of assets at below market value; unequal draws for equal labor, gifting. With respect to tax policy, ERS is completing a study of tax laws on farm transfer: current laws provide incentives to invest in equipment rather than labor; this discourages hiring young folks. Also serves as a disincentive to lease rather than hold land. The tax code contains obstacles for contract sales.

Regarding share leasing and mentoring: limitations on earned income, and share lease income subject to self-employment tax. Working with entering farmers, we need to address marginal economic returns from traditional enterprises, and provide resources and technical assistance to assure success, including interpersonal skills, education and information regarding alternative tenure options, and business planning.

We need to acknowledge the role of new partners: - land trusts - municipalities - CSA shareholders - community members - local lenders - sprawl/smart growth/greenfields/open space advocates - economic development - planners - community colleges (business training)
Conclusion: Getting new farmers onto farmland is critical. - There are many barriers to successful entry - Traditional models of farm succession are inadequate - New farmers need information, assistance; land is not sufficient - Exiting farmers must be a part of the solution - We need to create new models and examine existing policies - We need new partners

Exhibitors

*Sustainable Agriculture,
Research and Education
(SARE)*

Valerie Berton
Communications Specialist
2121 Ag/Life Sciences Surge
Bldg, University of Maryland
College Park, MD 20742-3358
Phone: 301-405-3186
Fax: 301-314-7373
Email: vberton@wam.umd.edu
Website: <http://www.sare.org>

*USDA - Agricultural Research
Service*

Nancy Ragsdale
5601 Sunnyside Avenue, 4-
2108, Beltsville MD 20705-
5140
Phone: 301-504-4509
Fax: 301-504-6231
Email: nnr@ars.usda.gov
Website: www.ars.usda.gov/

*USDA - Natural Resource and
Conservation Service*

Kim Berry
North Carolina A&T State
University, CH Moore Bldg.,
Lindsay & Beech Streets,
Greensboro, NC 27411
Phone: 336-334-7464

*USDA - National Agricultural
Statistics Service*

Mark Harris
Room 5914, 1400
Independence Ave., SW,
Washington, DC 20250
Phone: 202-720-4214
Fax: 202-690-0675
Email: nass@nass.usda.gov
Website: www.usda.gov/nass

Lincoln University

Bill Helvey
PO Box 29
Jefferson City MO 65102
Phone: 573-681-5554; Fax:
573-681-5546
Email: helveyw@lincolnu.edu
Website:
[www.zeus.lincolnu.edu/cooper-](http://www.zeus.lincolnu.edu/cooperativeextension/)
[ativeextension/](http://www.zeus.lincolnu.edu/cooperativeextension/)

University of Missouri

Dave Baker
2-28 Agriculture Bldg
Columbia, MO 65211
Phone: 573-882-6385
Fax: 573-884-7993
Email: bakerd@missouri.edu
Website:
www.cafnr.missouri.edu/

ARKANSAS

*Appropriate Technology
Transfer for Rural Areas
(ATTRA): A National
Sustainable Agriculture
Information Service*

Teresa Maurer, Project
Manager
PO Box 3657, Fayetteville AR
72702
Phone: 1-800-346-9140
Website: <http://www.attra.org>

Heifer Project International
Sue Bertrand, Program Director
1015 Louisiana Street
Little Rock AR 72202
United States and Canada
Phone: 800-422-1311 or 501-
907-2656

CALIFORNIA

Soul of Agriculture
Stan Dundon, Coordinator
Soul of Agriculture
PO Box 72084, Davis, CA
95617
Phone: 530-756-9679 or 1-888-
393-4047 pin 7183 ext 31; Fax:
530-756-7857

*University of California-Davis -
Small Farm Center*

Susan McCue
One Shields Ave
Davis CA 95616-8699
Phone: 530-752-8136; Fax:
530-752-7716
Email: semccue@ucdavis.edu
Web site: www.sfc.ucdavis.edu/

GEORGIA

*Federation of Southern
Cooperatives*

Jerry Pennick, Deborah
Johnson or Heather Gray
2769 Church St
East Point GA 30344
Phone: 404-765-0991
Email: dajohnson@mind-
spring.com

Fort Valley State University

Glenwood Hill
PO Box 4061, Fort Valley GA
31030-4313
Phone: 912-825-6269
Email: hillg@mail.fvsu.edu

ILLINOIS

*Illinois Department of
Agriculture*

Kent McFarland
Illinois State Fairgrounds
PO Box 19281, Springfield IL
62794-9281
Phone: 217-782-6675
Fax: 217-524-5960
Email:
kmcfarland@agr.state.il.us
Website: www.agr.state.il.us

*Illinois Sustainable Agriculture
Society*

Jeff Hyette
985 W Pershing Road, Suite E,
Decatur IL 62526
Phone: 217-877-5670 ext 115;
Fax: 217-877-4667

*University of Illinois - Value-
Added Resources for Profitable
Farming Communities*

Deborah Cavanaugh-Grant
Department of Natural
Resources and Environmental
Sciences, Agroecology/
Sustainable Agriculture
Program, PO Box 410,
Greenview IL 62642-0410
Office phone and fax: 217/968-
5512
Email:
cavanaughhd@mail.aces.uiuc.edu

Website: www.aces.uiuc.edu/~asap/

INDIANA

Purdue University - Core4 Approach for Cropland

Dan Towery
1220 Potter Drive, Room 170, West Lafayette IN 47906
Phone: 765-494-9555
Email: towery@ctic.purdue.edu



Purdue University - Profit-making Strategies for Smaller Scale Farms: "Ways to Grow"

David Swaim
1730 Camp Rotary Road, Crawfordsville IN 47933
Phone: 765-362-4986
Fax: 765-361-9096
Email: dswaim@tctc.com

IOWA

Iowa State University - Sustainable Agriculture Extension Program

Diane Mayerfeld
Iowa State University
2104 Agronomy Hall, Ames IA 50011
Phone: 515-294-0887 or 294-1923;
Fax: 515-294-9985
Email: dmayerfe@iastate.edu



North Central Regional Center for Rural Development

Kristi Hetland
North Central Regional Center for Rural Development
Iowa State University, 108 Curtiss Ames IA 50011-1050
Phone: 515-294-9768
Fax: 515-294-3180
Email: kheland@iastate.edu
Website: www.ncrcrd.iastate.edu



Practical Farmers of Iowa

Nan Bonfils, Program Assistant
2104 Agronomy Hall, Iowa State University, Ames IA 50011
Phone: 515-294-8512
Fax: 515-294-9985
Email: nanb@iastate.edu

KENTUCKY

Kentucky State University
Marion Simon
Cooperative Extension Program
Kentucky State University Box 196

Frankfort KY 40601
Phone: 502-227-6437
Fax: 502-227-5933
Email: msimon@gwmail.kysu.edu

MAINE

University of Maine - Extension Livestock Team ... Serving the Needs of Maine Producers

Donna Lamb, Extension Educator
Piscataquis County, 59 E Main Street Dover-Foxcroft NE 04426
Phone: 207-564-3301
800-287-1491 (ME only)
Email: dlamb@umext.maine.edu
Website: www.umext.maine.edu/counties/piscataq.htm



Jolunty's Selected Seeds

Lainie Kertesz, commercial sales representative
Foss Hill Rd, Dept #50430, Albion, ME 04910
Phone (207) 437-4395
fax (800) 738-6314 or (207) 437-2675
Email: commercial@johnnyseeds.com
Website: www.johnnyseeds.com

MARYLAND

1890 Land Grant Universities

Sam Donald
Early Childhood Research Center, Room 1103, University of Maryland-Eastern Shore, Princess Ann MD 21853
Phone: 410-651-6074
Email: sldonald@mail.umes.edu



USDA Service Center Implementation Team (SCIT)

Mike Graham
SCIT
5601 Sunnyside Ave, Beltsville MD 20705-5710
Phone: 301-504-4175
Email: Mike.Graham@NFAC.USDA.GOV

MINNESOTA

University of Minnesota - Farm Beginnings: Helping to Create a New Generation of Farm Families in SE Minnesota
Chuck Schwartau, Extension Educator
University of Minnesota Extension Service

Courthouse Room 105
509 West Fifth St
Red Wing MN 55066
Phone: 651-385-3100; Fax: 651-385-3089
Email: cschwartau@extension.umn.edu



Sustainable Farming Association of Minnesota

DeEtta Bilek
20415 County Road 2, Aldrich, MN 56434
Phone: 218-445-5475
Email: deebilek@wcta.net

MISSOURI

Missouri Beef Industry Council, Inc.
Melissa Markway, Communications Director
2306 Bluff Creek Dr #200, Columbia MO 65201
Phone: 573-817-0899
Fax: 573-817-0889



Missouri Department of Agriculture

Tony Stafford
PO Box 630, Jefferson City MO 65109-0630
Phone: 573-751-6827
Website: www.mda.state.mo.us/



Missouri Department of Conservation

Bob Miller
MO Dept of Conservation
PO Box 180, Jefferson City MO 65102-0180
Phone: 573-751-4115 ext 143
Web site: www.conservations.state.mo.us/



Missouri Department of Natural Resources

Glenn Lloyd
PO Box 176, Jefferson City, MO 65102
Phone: 573-526-1724
Email: nrlloyd@mail.dnr.state.mo.us



Missouri Sustainable Agriculture Demonstration Award Program

Joan Benjamin
4041 N Rt. J, Rocheport MO 65279
Phone: 573-445-2194
Email: benjaminj@missouri.edu
Web site: www.agebb.missouri.edu/sustain/sagde.mo.htm

Small Farm Today
Ron Macher
3903 W Ridge Trail Rd, Clark MO
65243
Phone: 800-633-2535
Fax 573-687-3148
Email smallfarm@socket.net
Web site: www.smallfarmtoday.com

■
Sustaining People through Agriculture Network
Joan Benjamin
322 Mumford Hall, Columbia MO
65211
Phone: 573-884-3794
Fax: 573-882-3958
Email: benjaminj@missouri.edu
Web site:
<http://agebb.missouri.edu/sustain/saconf.htm>

■
University of Missouri - AgrAbility Project
Karen Funkenbusch, Willard Downs
207 Agricultural Engineering Building
Columbia, MO 65211
Phone: 800-995-8503
Fax: 573-884-5650
Email: funkenbuschk@missouri.edu
Web site:
<http://www.fse.missouri.edu/agrability/>

■
University of Missouri - Agriculture Electronic Bulletin Board (AgEBB)
John Travlos
325 Mumford Hall
Columbia, MO 65211
Phone: 573-882-4827
E-mail: agebb@missouri.edu
Web site: <http://agebb.missouri.edu/>

■
University of Missouri - Center for Agroforestry
Sandra Hodge, Coordinator,
Technology Transfer
203 ABNR-Forestry, Columbia MO
65211
Phone: 573-884-6729
Email: hodes@missouri.edu
Web site:
www.web.missouri.edu/~afta/afta_home.html

■
University of Missouri - Missouri Alternatives Center
Debi Kelly, Project Manager
531 Clark Hall, Columbia MO 65211
Phone: 573-882-1905

800-433-3704 (MO only)
Fax: 573-884-4336
Email: kellyd@umsystem.edu
Web site:
www.agebb.missouri.edu/mac

■
University of Missouri - Missouri Value Added Agriculture Outreach
Douglas Holt, Interim Director, State Extension Specialist for Food Safety
215 Agricultural Engineering Building
Columbia MO 65211
Phone: 573-882-1150
Fax 573-884-5650
Email: holtd@missouri.edu
Website:
www.fse.missouri.edu/value.htm

■
University of Missouri - Missouri Watershed Information Network (MoWIN)
Joe Dillard, Director
232 Agricultural Engineering Building
Columbia, MO 65211
Phone: 573-882-0085
Fax: 573-884-5650
Toll Free (MO only): 1-877-H2O-SHED (426-7433)
E-mail: DillardJ@missouri.edu
Web site:
www.outreach.missouri.edu/mowin/

■
University of Missouri - Sustainable Agriculture Extension Program
Joan Benjamin
322 Mumford Hall
Columbia MO 65211
Phone: 573-884-3794; Fax: 573-882-3958
Email: benjaminj@missouri.edu
Web site:
www.agebb.missouri.edu/sustain/index.htm

■
University of Missouri - Water Quality Program
Steve Mellis, Water Quality Associate
227 Agricultural Engineering
Columbia MO 65211
Phone: 573-882-0085
Fax: 573-884-5650
Email: mellis@missouri.edu

MONTANA

Alternative Energy Resources Organization (AERO)
25 S. Ewing, Ste. 214, Helena, MT
59620

Phone: 406-443-7272
Fax: 406-442-9120
Email: aero@desktop.org

NEBRASKA

Center for Rural Affairs
Chuck Hassebrook, Program Director
PO Box 406, Walthill NE 68067
Phone: 402 846-5428
Fax: 402-846-5420
Email: info@cfra.org
Website: www.cfra.org

■
Nebraska Sustainable Agriculture Society
Cris Carusi
PO Box 736, Hartington NE 68739
Phone: 402-254-2289
Email: crisc@navix.net
Website:
www.netins.net/showcase/nsas/

■
University of Nebraska - Entrepreneur Assistance Program
Arlis Burney, Food Processing Center
143 Filley Hall, Lincoln NE 68583-0928
Phone: 402-472-8930
E-mail: aburney1@unl.edu
Website:
www.foodsci.unl.edu/fpc/market/ent.htm

NEW YORK

Cornell University - Farming Alternatives Program
Judy Green
Department of Rural Sociology
17 Warren Hall, Ithaca NY 14853
Phone: 607-255-9832
Fax: 607-254-2896
Email: jmp32@cornell.edu
Web site:
www.cals.cornell.edu/dept/ruralsoc/fap/

NORTH CAROLINA

North Carolina Cooperative Extension Small Farm Programs
Mary Mafuyai-Ekanem
North Carolina A&T University
PO Box 21928, Greensboro NC 27420-1928
Phone: 336-334-7298
Fax: 336-334-7298
Email: mafuyai-

ekanem@worldnet.att.net

OHIO

American Small Farm Association and Magazine

3219 Ostrander Road, Ostrander OH 43061

Email: astevens@ee.net



Rural Action - Sustainable Forestry and Agriculture Program

Colin Donohue

PO Box 157

Trimble, OH 45782

Phone: 740-767-4938

Email: rural3@frognet.net

PENNSYLVANIA

Pennsylvania Farm Link

Marion Bowlan

2708-A North Colebrook Road

Manheim, PA 17545

Phone: 717-664-7077

Fax 717-664-7078

Email: pafarmlink@redrose.net

TENNESSEE

University of Tennessee - Agricultural Development Center

Kent Wolfe, Marketing Specialist

Rob Holland, Feasibility Specialist

PO Box 1071, 307 Morgan Hall

Knoxville TN 37901-1071

Phone: 423-974-3824

Fax: 423-974-7448

Email: adc@utk.edu

Website: www.utextension.utk.edu/adc

VIRGINIA

Virginia State University Cooperative Extension Agriculture

Mitch Patterson

Box 9081

Petersburg VA 23806

Phone: 804-524-5834

Email: mpatterson@vsu.edu

WASHINGTON, DC

Rural Coalition

Debra Livingston, Director of Programs & Development

110 Maryland Ave NE, Suite 101

Washington DC 20002

Phone: 202-544-9611

Fax: 202-544-9613

Email: debrapples@aol.com

WISCONSIN

Consortium for Sustainable Agriculture, Research and Education

Elizabeth Bird

1450 Linden Drive, Room 146

Madison WI 53706

Phone: 608-262-9997

Email: eabird@facstaff.wisc.edu

Web site: <http://www.csare.org>



Sustainable Small Farm Information Network

Tom Parslow, Assistant Program Leader

Ag & Natural Resources Extension

633 Extension Building, Madison WI 53706

Phone: 608-262-9309

Fax 608-262-9166

Email: tparslow@facstaff.wisc.edu

Website: www.128.206.224.125/ssfin/



University of Wisconsin - Center for Integrated Agricultural Systems

John Hendrickson

1450 Linden Drive, Madison WI

53706

Phone: 608-265-3704

Email: jhendric@facstaff.wisc.edu

Web site: <http://www.wisc.edu/cias/>



University of Wisconsin - Healthy Farmers, Healthy Profits Project

Astrid Newenhouse

UW Biological Systems Engineering

Dept., 1005 Lorraine Dr., Madison WI 53705

Phone: 608-231-2622

Email: astridn@facstaff.wisc.edu

Website: www.bse.wisc.edu/hfhp/



University of Wisconsin Program on Agricultural Technology Studies

Marcy Ostrom

Taylor Hall, Room 202, 427 Lorch St., Madison, WI 53706

Phone: 608-265-3463

Email: mrostrom@facstaff.wisc.edu



Wisconsin Farm Center - Wisconsin Department of Agriculture, Trade & Consumer Protection

Gwen Garvey, Coordinator

Farm Link Program

PO Box 8911, Madison, WI 53708

Phone: 800-942-2474

Fax: 608-224-5110

Email:

garvegv@wheel.datcp.state.wi.us

United States Department of Agriculture exhibits:

USDA-APHIS, GIPSA, AMS - Marketing Regulatory Programs

John Williams, APHIS

Unit 33, River Road, MD

Phone: 301-734-8093

Email: jwilliams@usda.gov

Kelly Williams, AMS

Room 3062 South Bldg., 14th & Independence Ave, Washington, DC 20250

Phone: 202-720-4353

Email: Kelly_Williams@usda.gov

John Stencel, GIPSA

Room 3040 South Bldg, 14th & Independence Ave., Stop 3641, Washington, DC 20250

Fax: 202-205-3951

Email: jstencel@usda.gov



USDA-CSREES Small Farm Program

Stephanie Olson

Stop 2220

1400 Independence Ave. SW, Washington, DC 20250-2220

Phone: 202-401-6544

Fax: 202-401-5179

Email: solson@reeusda.gov

Website:

www.reeusda.gov/agsys/smallfarm/



USDA-Rural Development Mission Area/Rural Business/Cooperative Service

Bob Lovan

Mail Stop 3250, Washington, DC 20250-3250

Phone: 202-690-2583

Fax: 202-720-4641

Email: bob.lovan@usda.gov

Website:

www.rurdev.usda.gov/rds/pub/new



USDA-Risk Management Agency

Marie Buchanan

Room 6741 South Bldg., Washington, DC, 20250

Phone: 202-690-2686

Posters

1. D. Chembezi, *Small Farm Outreach and Technical Assistance Program*, Alabama A&M University, AL
2. Ron Morrow and Ann Wells, *Development of a Beef Cattle Farm Sustainability Check Sheet and Workshop*, NCAT/ATTRA, Fayetteville, AR
3. Ron Morrow and Ann Wells, *Development of a Mentor Training Program for Graziers*, NCAT/ATTRA, Fayetteville, AR
4. Ann Wells, Ron Morrow, Alice Beetz and Preston Sullivan, *Establishing a Graziers Network Group*, NCAT/ATTRA, AR
5. Desmond Jolly, Ellie Rilla, Ramiro Lobo and Diane Wallace, *Adding Agricultural Value to California Agriculture Through Agricultural Tourism Project*, Davis CA
6. Desmond Jolly, Richard Molinar, Benny Fouche and Michael Yang, *University of California - Pesticide Safety Education for Limited English Speaking Producers*, Davis CA
7. Deborah Giraud, *Farm Incubator Project to Encourage Economic Development*, University of California, CA
8. Mark Gaskell, Ben Faber, *New Crops for New Markets*, University of California, Davis, CA
9. Michael Olson, *Up Against Goliath: Ten Farmer, Santa Cruz, CA Business Strategies Which Enable Small-Scale Farmers To Become 400% to 1400% More Productive Per Unit Than Large Scale Farmers*
10. Ramiro Lobo, Desmond Jolly, Diane Wallace, and Scott Parker, *A Look at Certified Farmers Markets (CFMs) Agricultural Products in San Diego County*, University of California, Davis, CA
11. Cheryl J. Steele, *Structural Characteristics of Farms Operated by Young and Older Farmers*, USDA-ERS, DC
12. Grace Gershuny, *National Town Meeting for Organic Standard*, USDA-AMS, DC
13. Jim Maetzold, *Outdoor Recreation Trends, Private Land Use Opportunities, Potential Benefits, and Natural Resource Conservation Attitudes*, National Agritourism, USDA-NRCS, DC
14. Steven R. Koenig and Charles B. Dobson, *Farm Service Agency Lending to Family Farms*, USDA-ERS, DC
15. Vickie Parker-Clark, et al, *Creating a Sustainable Inland Northwest Food System*, University of Idaho, Moscow, ID
16. Michael Boland, David Coltrain, David Barton, and Elizabeth Boyle, *Education Research for All Natural Beef Cooperative*, Kansas State University, Manhattan, KS
17. Michael Boland, David Coltrain, and Chuck Marr, *Transaction Costs in Specialty Crops*, Kansas State University, Manhattan, KS
19. Betty King, *Size Appropriate Technology for Small Farmers*, University of Kentucky, Lexington, KY
20. Robert D. Halman, *Reaching out with Education: The Small Farm Operator*, University of Maryland, College Park, MD
21. Jennifer Thorn and Dale Johnson, *Mt. Pride Cooperative Small Meat Animal Project*, University of Maryland, College Park, MD
22. Emmanuel Ajuzie, John Ikerd, Tom Parslow, and Dyremple Marsh, *North*

- Central Regional Center for Small Farms and Sustainable Rural Communities*, Lincoln University, Jefferson City, MO
23. Delores Votra, *Setting up Strawberry and Raspberry Patch Using Shredded Leaf and Grass Mulch*, Wheatland, MO
24. John Delly, *Local Composting: An Alternative to Commercial Potting Soil Using Chrysanthemums*, Elkand, MO
25. Gary Ogg, Gary Lesoing, *Overseeding Legumes to Increase Productivity of Pastures In West Central Missouri*, Richmond, MO
26. Bob Shrunk, Gary Lesoing *Small Grain as Cover Crops for Erosion Control and Forage in West Central Missouri*, Norborne, MO
27. Alan Fear, *Production and Marketing Strategies For the Small Scale Ostrich Operator*, Hermitage, MO
29. Troy Hart, *Artificial Insemination of Honeybee*, Londell, MO
30. Michael Lane, *Passive Annual Cold Storage*, Hartville, MO
31. Lynn Rogers, Gary Ogg, *Alternative Crops for West Central Missouri*, Richmond, MO
32. K. B. Paul, Tory Shade, Jim Thompson and J.C. Owsley, *Missouri Small Farm Family Program: Assisting Families to Sustain on Small Farms*, Lincoln University, MO and University of Missouri
33. J.V. Worstell and Van Ayers, *African-American Small Farm Successes: A Case Study of Policy Impact*, Delta Enterprise Network, Almyra, AR
34. Nigatu Tadesse, Warren Sifferath and Bill Wilcke, *Farm Incubator Program at the University of Minnesota*, St. Paul, MN
35. Carey L. Ford and Terence L. Lynch, *An Assessment of Farm Injuries and Safety Practices in Mississippi* Cooperative Extension, MS
36. Carl R. Hughes, Madra N. Dorsey, Dovi Alipoe, Magid A. Dagher and Samuel Scott, *Analysis of Meat Goat Production and Marketing in Mississippi*, Alcorn State University, Lorman, MS
37. Daniel M. Lyons, Sr., Arthur Purcell, Mary Mafuyai-Ekanem, *Small Farm Outreach Training and Technical Assistance Project*, North Carolina A&T State University, Greensboro, NC
37. J.M. Ibrahim, *North Carolina Environmental Intervention Program*, Greensboro, NC
38. Eugene E. Jones, *A National GIS-Based Registry For Small or Limited Resource Farms and Farmers*, North Carolina A&T University, Greensboro, NC
39. Wyatt Fraas and Kendall Scheer, *Community-based Projects to Build Healthy Small Farms And Rural Communities*, Center for Rural Affairs, Lincoln, NE
40. Dave Varner, *Nebraska Soybean and Feed Grains Profitability Project*, University of Nebraska, Lincoln, NE
41. Jamie O'Rourke, *Farmer to Farmer Network: The Beginning Farmer of New Hampshire*, Southern NH RC&D, NH
42. Monika Roth, *Direct Marketing Today*, Cornell University, Ithaca, NY
43. James M. Barrett, *Grazing Corn: Inexpensive Feed for Beef*, The Ohio State University, Columbus, OH
44. Roger Bender, *Successful Ventilation of Two-Story Barns*, The Ohio State University, Columbus, OH
45. Jim Hoorman, *Anish Water Quality Education*, The Ohio State University, OH
46. Larry Lev and Garry Stephenson, *A Successful Survey Method to Benefit Farmers and Consumers*, Oregon State University, Corvallis, OR
47. George Greaser, *Non-traditional Agricultural Enterprises Targeted for Small And Part Time Farmers- Display of Publications*, Penn State University, University Park, PA
48. S.P. Singh, F. Tegegne, E. Ekanem, S. Muhammad, S. Comer and A. Akuley, *Research Needs of Small Farmers in Tennessee*, Tennessee State University, Nashville, TN
49. Cynthia Viagnetti, *National Photos of SARE Farmers*, Washington, D.C.
50. Curtis E. Beus, *Clallam County Sustainable Small Farm Incubator and Demonstration Program*, Washington State University, Pullman, WA
51. Charles A. Brun, *Growth of Medicinal Herb Industry in the Pacific Northwest*, Washington State University, Pullman, WA

52. Steve Evans, *Puget Sound Fresh*,
Seattle, WA

53. Susan R. Kerr, *Responding to
local Need: Teaching Safe Home
Processing to Small Scale Meat Goat
Producers*, Washington State
University, Pullman, WA

54. Elizabeth Bird and E. B. Ferris,
*Policies and Practices in Food
Farming Systems*, CSARE, Madison,
WI

55. Carl Butler, *USDA Agricultural
Marketing*, West Virginia State
College, Morgantown, WV

56. Paul Reeves, *Examining
Opportunities for Minority Farmers
Through Renewable Energy
Technologies*

International Submission:

57. Rob Napier, *The Future of Family
Farming Beyond 2000: An
International Perspective*, University
of Sidney, Australia

Continued from p. 135--Exhibits

USDA - National Agroforestry Center
Clover Shelton
National Agroforestry Center
East Campus - UNL, Lincoln, Nebraska
68583-0822
Phone: 402-437-5178
Fax: 402-437-5712
Email: cshelton/rmrs_lincoln@fs.fed.us
Website: www.unl.edu/nac

SMALL FARMERS OUTREACH AND TECHNICAL ASSISTANCE PROGRAM

Duncan M. Chembezi and Joseph Befecadu
School of Agricultural and Environmental
Sciences, Alabama A&M University,
P.O. Box 700,
Normal, Alabama 35762

Alabama A&M University has several programs designed to enhance the quality of life and economic opportunities for small farmers and under-served farm communities in north Alabama. The Small Farmers Outreach and Technical Assistance Program is one of the programs that has touched the lives of many small and limited-resource farmers in Alabama. The project has developed a coherent and effective information delivery system consistent with the needs of small farmers. As a result, the number of project participants has soared over the past three years, as have inquiries by small farmers about the types of assistance the project provides.

The majority of the participants (previously in farm financial crisis) are currently able to cover and/or recover at least their variable costs. The purpose of this poster display is to share some of the many success stories enjoyed and obstacles experienced by our project. The overall goal is to help other outreach providers achieve similar successes by sharing information and outreach strategies. It is hoped that we will also learn and benefit from other projects so that we may continue to effectively help our small and limited-resource farmers improve their livelihood and farm incomes.

THE FARM INCUBATOR PROJECT

Deborah Giraud and Sommer Mateu
University of California Cooperative Extension,
5630 S. Broadway
Eureka, California 95503

The Farm Incubator Project was started to encourage economic development by leasing small tracts of prime agricultural land to nascent farm enterprises. In Humboldt County, California, and many other areas, parcels of land under two acres are generally not available for lease. People interested in establishing agricultural businesses are, therefore, required to initiate their businesses with high acreage and a corresponding high capital investment, or not enter farming. These factors do not enhance the expansion of agricultural job opportunities in the county. We believed that by providing small parcels of land, along with business skills training and agricultural advice, we would enable the creation of new agricultural businesses and the expansion of existing ones.

The project took a year in planning and development of a MOU for the University and USFS to work together. Then, eight leasable, irrigated plots were made available for cultivation. Some participants came and went, but overall 11 people received entrepreneurial training and the opportunity to test the feasibility of their business ideas. Two workshops on maintaining business records were held, and many individual farm calls and phone consultations were made, with the advisor distributing farming information to program participants.

Our desired outcomes were to create a place where farmers could test their ideas on small parcels with low capital investment, increase our understanding of what enterprises are feasible for small farmers, create good pub-

lic relations for the USFS with the local community, support some new and existing farmers by providing crop information and business skills, and incubate them to larger, profitable businesses.

We saw an increase in employment opportunities in the agricultural sector. This is indicated by the creation of new farm enterprises, an increase in the acreage farmed and gross sales of these farm enterprises, and an increase in the number of other persons employed at hourly wage jobs by these farm entrepreneurs.

After seven years the project must end, as the land is needed for tree crop expansion. We believe it was a success and would encourage other areas to use this as a model to enhance small farm creation and expansion.

NEW CROPS FOR NEW MARKETS:

*Research And Extension Education For Small
Farms On The California Coast*

Mark Gaskell and Ben Faber
University of California Cooperative Extension,
624 West Foster Rd.,
Santa Maria, California 93455

Many crops such as sugar peas, soft squash, and specialty peppers, which have long been key crops for small-scale growers in California, now suffer from uncertain profitability due to frequent oversupply. Beginning in 1995, farm advisors working in Santa Barbara, San Luis Obispo, and Ventura counties, and with initial support from the statewide Small Farm Program, initiated a research and extension program to develop alternative new crops.

An important aspect of the research program has been the use of market signals to identify specific crops and guide agronomic research. The research effort has targeted fresh specialty fruits and vegetables for diverse local markets and large nearby markets in Los Angeles and San Francisco. The project has sought to take advantage of the mild and productive agroecological conditions in the region to develop production technology for promising new crops.

We will describe the key market and production related parameters for a diverse group of promising crops identified thus far, which include:

- raspberries
- blackberries
- blueberries
- vegetable soybean
- lychees
- longans

Although a number of these are relatively long-term perennial crops, there are sufficient data collected thus far to report success on small farms typical of coastal California.

A Look At Certified Farmers Markets (Cfms) Consumer Attitudes And Willingness To Support Locally Grown/Made Agricultural Products In San Diego County

Ramiro E. Lobo, Farm Advisor

Univ. of California, San Diego County

Desmond A. Jolly, Director

UC Small Farm Center

B. Diane Wallace, County Director, UCCE San Diego County

Scott A. Parker, Program Representative
UCCE San Diego County

Certified Farmers Markets (CFMs) have been a part of the San Diego County agricultural landscape for many years. They provide an outlet for small growers to sell their products and are an important link between urban and agricultural segments of the county. As a result, they play a key role in reducing friction in the ag-urban interface and help sustain agriculture. Twenty-four CFMs of various sizes operate in several communities of the county. Learning about CFMs and their customers is essential for these markets to be an effective and accessible outlet for small farmers to sell their products and a valuable tool to educate consumers in metropolitan counties.

This paper will present the results and analysis of a study conducted at 19 Certified Farmers Markets in San Diego during the summer of 1998. Our findings will help improve the understanding of and

promote the operation of CFMs in metropolitan counties. First, our study will provide demographic information on customers at CFMs in San Diego County. Second, it will assess and analyze CFM consumer attitudes and evaluate the factors affecting their purchasing decisions at CFMs. Third, it will assess CFM consumers' willingness to buy locally grown or locally made agricultural products in order to support local agriculture. Finally, it will assess and discuss the role and benefits of CFMs as a tool to educate consumers about agriculture and its importance for San Diego County's economy and quality of life.

Adding Value To California Agriculture Through Agricultural Tourism

Desmond Jolly, Ramiro Lobo, Ellie Rilla, and Jeff Rodriguez
University of California

Supported by a Fund for Rural America grant, the University of California's Small Farm Center has developed a statewide project with the objective of adding value and enhancing the income stream for small and moderate scale farm operations and rural communities. The Agricultural Tourism Project provides farmers and other decision makers with the analytical tools that can facilitate investments in, and development of, agricultural tourism operations. So far, the effort has focused on three subregions: the North Coast, the Central Coast, and the San Diego area.

The project is coordinated by a statewide work group and three regional committees. Agricultural tourism operations include a wide range of options: bed and breakfast and u-pick operations, roadside stands, farm stands, tours, festivals, and the like.

Pesticide Safety Education for Limited English-Speaking Producers

Desmond Jolly, Richard Molinar
and Benny Fouche
University of California

The University of California's Small Farm Program has developed an educational outreach project that focuses on small-scale agricultural producers with limited English-speaking capacity, as well as limited access to information. The Pesticide Safety Education Project targets practices in handling, storage, application, and disposal of pesticides to improve levels of safety to farmers, their families, and the environment. The project utilizes a video, developed by the Small Farm Program and the U.C. Integrated Pest Management Education Program, as well as audiotapes and leaflets in four languages that explain the safe use of pesticides. Key targets for the program are Asian-American groups, as well as Spanish-speaking growers.

Young Farmers Face Different Challenges Than Older Farmers

Cheryl J. Steele
Economic Research Service, U.S. Department
of Agriculture

Farm entry and exits are observed in all groups, but research suggests that entrants are concentrated in younger age groups and exits are concentrated in older age groups.

Studies of young farmers' entry rates suggest that they face some barriers to entry. Barriers cited range from having limited access to credit to a deficiency in farm management skills. Farm lenders have even cited the lack of capital resources as a primary obstacle facing young farm entrants. However, studies suggest that a declining farm population and the prospective higher incomes offered in the non-farm sector as playing a major role in the decline of young farm entrants.

Young farmers have become a focus of federal credit and agricultural policy as spelled out in the Federal Agricultural Reform Act of 1996. The National Commission on Small Farms cites young farmers as a special emphasis audience - its policy goal # 5 challenges institutions to seek policy and programs that improve farm entry for young farmers.

This research, using the 1996 Agricultural Resource and Management Survey, will discuss the financial and structural characteristics of farms operated

by young farmers compared to those operated by older farmers.

Creating A Sustainable Inland Northwest Food System

Vickie Parker-Clark, Kootenai County
Extension; Cinda Williams and Beth
Malouf, University of Idaho Sustainable
Agriculture; Colette DePhelps, Rural
Roots; Peggy Adams, Palouse-Clearwater
Environmental Institute
University of Idaho
106 E. Dalton Ave.
Coeur d'Alene, Idaho 83815

Objectives: Inland Northwest agriculture is a combination of large and small farms growing a variety of crops. Many small acreage landowners want to earn income from their land and be good stewards. Urban dwellers may seek wholesome food, but they don't necessarily identify the purchase of food with the local agricultural economy.

In September 1997 the Inland Northwest Community Food Systems Task Force was formed. The task force's goals included:

- § providing networking opportunities among all food system segments
- § providing educational opportunities
- § providing visibility and economic viability to small farmers

Delivery methods: Tours, workshops, courses, tastings, a Web site (www.uidaho.edu/inwcfs), list serve, and newsletter were used to meet the task force's goals.

Impacts:

- § Almost 1,000 people participated in

RESEARCH AND EDUCATION FOR ALL NATURAL BEEF COOPERATIVE

Michael Boland, David Coltrain, David Barton,
and Elizabeth Boyle
Kansas State University,
Manhattan, Kansas 66506

various activities, rating them as excellent.

§ As a result of a Small Acreage Farming short course, 95% of participants indicated they could move forward with their farm plans.

§ A marketing alliance of small farmers in the CDA/Spokane area is forming.

§ The task force has provided impetus for start-up of several small farms in the region.

§ Members of the task force from Stevens Co., WA, formed the Northeast Washington Small Farms Association.

§ The task force voted to become a non-profit organization, "Rural Roots, The Inland

Northwest Community Food Systems Association."

A cooperative of small Kansas natural beef producers markets natural beef, which is defined as beef produced without sub-therapeutic hormones with organic or non-organic grain fed in the finishing ration. The meat is dry-aged prior to sale. This study was motivated by USDA's National Commission on Small Farms and funded by the USDA Rural Business Service and Fund for Rural America. A team of three agricultural economists, two retail supermarket meat managers, and procurement managers collaborated in the project.

The purpose was to: 1) provide recommendations for producers interested in marketing natural beef and 2) develop processed beef products such as frankfurters, precooked roast, etc. Results from mail and computerized kiosk surveys were used to gather consumer information from retail supermarkets that sell conventional meat alongside natural meat. Weekly transaction scanner data were used to identify information on the top 500 meat consumers who were found through supermarket scanner data as the largest purchasers of beef products, and 500 meat consumers who also purchased organic products. Nutritional analysis and product develop-

ment were done on various processed products. The cooperative conducted a series of in-store promotions on the products, and consumer attitudes towards these processed products were measured.

Improved taste rather than natural labeling was the biggest factor in consumer purchases. The "All Natural Beef" brand was confusing to consumers, who thought it was a label. Consumers were very receptive to the taste and flavor of processed natural beef products.

EFFECTS OF COVER CROPS AND TILLAGE ON SWEET CORN PRODUCTION

Gary R. Cline and Anthony F. Silvernail
Community Research Service, Kentucky State
University,
129 Atwood Research Facility,
Frankfort, Kentucky 40601

A split-plot factorial experiment examined effects of tillage and winter cover crops on Merit sweet corn in 1994, 1995, and 1996. Main plots received tillage or no tillage. Cover crops consisted of hairy vetch, winter rye, or a mix, and N treatments consisted of plus or minus inorganic N fertilization. Following watermelon not receiving inorganic N, vetch, and mix cover crops produced total N yields of approximately 90 kg/ha that were more than four times greater than those obtained with rye. However, vetch dry weight yields (2.7 mg/ha) were only about 60% of those obtained in previous years due to winter kill.

Following rye winter cover crops, addition of ammonium nitrate to corn greatly increased ($P < 0.05$) corn yields and foliar N concentrations, compared to treatments not receiving N. Following vetch, corn yields obtained in tilled treatments without N fertilization equaled those obtained with N fertilization. However, yields obtained from unfertilized no-till treatments were significantly ($P < 0.05$) lower than yields of N-fertilized treatments. Available soil N was significantly ($P < 0.05$) greater following vetch compared to rye after corn

planting. No significant effects of tillage on sweet corn plant densities or yields were detected. It was concluded that no-tillage sweet corn was successful, and N fixed by vetch was able to sustain sweet corn production in tilled treatments but not in no-till treatments. In previous years normal, higher-yielding vetch cover crops were able to sustain sweet corn in both tilled and no-till treatments.

Size-Appropriate Technology For Small-Scale Farmers

Betty King
University of Kentucky, 19 Agricultural
Engineering Bldg. #2,
Lexington, Kentucky 40546-0276

This presentation is on size-appropriate technology ideas for small-scale farmers such as women, part-timers, and hill farmers. It features case study examples of 100-acre farms and 40-acre farms, using a systems approach to farming. Examples utilize small-scale equipment and innovations such as walking tractors, portable sawmills, solar fencing, and water systems.

Ideas for making and saving money in small-scale farm operations is included. I have conducted a few workshops with farmers in the state. I have a good slide program of size-appropriate equipment and technology for hill farms. I also have a Web site under construction on size-appropriate technology for farmers.

The Third Thursday Thing:
*Sustainable Agriculture Training
 At The Kentucky State University
 Research Farm*

Marion Simon
 Cooperative Extension Program, Kentucky
 State University,
 Box 196,
 Frankfort, Kentucky 40601

The Kentucky Cooperative Extension System Training Project has successfully developed multidisciplinary teams of farmers, 1890 and 1862 extension and research professionals and paraprofessionals, NRCS and other agency professionals and technicians, Kentucky Department of Agriculture and other state agency staff, Heifer Project International, agribusiness leaders, consumer advocates, and veterinarians to address sustainable agriculture issues in Kentucky.

Nearly 85 people regularly attend the monthly mini-field day training sessions with more than 400 attending throughout the year. Many participants commute for three to four hours to attend. Enthusiasm is high as participants look forward to the next training sessions. Topics covered have included many production, marketing, consumer awareness, and socio-economic issues. The natural progression of the Kentucky State University Research Farm has provided an excellent site for the hands-on training, plus the opportunity for participants to view the monthly progres-

sion of sustainable farming via the monthly farm walk and talk session.

Reaching Out With Education:

The Small Farm Operator

Robert D. Halman
Maryland Cooperative Extension
Harford County

Of the more than 600 farms in an ever-urbanizing Harford County, 15% are of the small, part-time type. Many of these small farms are ones that are involved in alternative crop production such as cut flowers, vegetable production, aquaculture, equine management, and other diversified livestock enterprises. To address the needs of these unique farming enterprises, a yearly series of small enterprise workshops has been organized and implemented. This year MCE will organize the first Small Farm Conference of the Mid-Atlantic region.

While new technology plays a pivotal role in the future of today's farming practices, efforts to enhance environmental stewardship require a logical transition to the use of this technology. Global positioning systems (GPS) are being used not only to help small farmers in soil testing and applying fertilizers but also to map producers' pasture systems for grazing, creating a more "urban friendly" environment for our ever-expanding urban neighbors.

Workshops/demonstration days were implemented to include the urban public to illustrate environmentally friendly farming practices. Harford County is an excellent

example of an outreach program that involves promotion of environmental stewardship and wise use of natural resources.

MT. PRIDE COOPERATIVE SMALL MEAT ANIMAL PROJECT

Jennifer D. Thorn and Dale M. Johnson
Maryland Cooperative Extension Service

In 1997, a Small Meat Animal Project was initiated in Garrett County, Maryland, to assist agricultural producers in developing and filling niche markets for alternative meat animal products in the Mid-Atlantic region. The project was initiated by Maryland Cooperative Extension, in collaboration with Garrett County Government and other public and private institutions. While Garrett County remains the principal business hub, this project expanded far beyond Garrett County, and producers from Maryland, West Virginia, Pennsylvania, Virginia, and North Carolina are now supplying the market. This increased agricultural production is providing additional business revenues and jobs in a local economy that has recently suffered setbacks from business downsizing and closing. The specific animal species that this project focuses on are rabbit and goat.

Specific accomplishments include the following:

- Establishment of the "Mt. Pride" production, processing, and marketing cooperative.
- Producers/cooperative members are learning the leadership, management, and financial skills needed to operate the cooperative.
- Producers are learning business and management skills to operate their small animal livestock enterprises more efficiently and profitably.
- Producers are adopting nutritional, health, and reproduction skills to improve livestock quality

and quantity.

- Producers are learning marketing practices that will enhance the quality of the meat products to satisfy the increased demand for their small meat animal products.
- Strong stable markets are being established for rabbit and other small meat animal products.
- A small scale processing plant is working closely with the cooperative to process and package high-quality, USDA-inspected small meat animal products.

EXAMINING OPPORTUNITIES FOR MINORITY FARMERS THROUGH RENEWABLE ENERGY TECHNOLOGIES

Paul Reeves and Bernard Moore
Hyattsville, Maryland

The farmer has historically been a symbol of strength and endurance in America. Slogans such as "Support American farmers because they feed you" are commonplace throughout the Heartland in the United States. Small farms represent the last vestiges of the American frontier spirit, and they have drawn increasing attention as they disappear due to the prevalence of large corporate farms.

One sector that has been hit hardest by this shift is the minority farmer. Aside from the obvious consequences of competing with large corporate farms, minority farmers have suffered from an additional variable that has contributed to their rapid demise - racism.

A landmark settlement by the federal government, followed by a presidential apology, placed minority farmers in a unique position of having their USDA debt wiped clean. The victims received a modest sum of money designed to compensate for their losses.

While these measures are intended to be irenic gestures by the government to address the inequities of its past behavior, the competition represented by large corporate farms continues to threaten the existence of all small farmers. In short, new opportunities need to be explored to ensure

the survivability of the American minority small farm and the small farm in general.

The looming deregulation of the electricity market will provide new opportunities for diverse partners to participate in power generation. To ensure success, it is imperative for the renewable energy industry to become better acquainted with as many of these potential partners as possible. Most minority small farms have the unique benefit of being located in areas rich in resources necessary to generate green power. In addition, energy generated from bio-fuels requires the skills that most small farmers currently possess (i.e., land and labor resources to cultivate crops grown as bio-fuel). These characteristics make them attractive partners for the proliferation of renewable energy. This proposal explores the potential of such a union.

The project will support the growth of the renewable energy industry by providing new opportunities with new partners. In addition, it will help alleviate the current crisis facing minority farmers while presenting new options for small farmers in general.

NORTH CENTRAL REGIONAL CENTER FOR SMALL FARMS AND SUSTAINABLE RURAL COMMUNITIES

Emmanuel Ajuzie and Dyremple Marsh
Lincoln University

John Ikerd, University of Missouri

Thomas Parslow, University of Wisconsin

Recognizing the increasing rate of loss of small farm numbers and the role of small farms in the nation's food supply, the Secretary of Agriculture's National Commission on Small Farms called for an innovative approach to addressing small farm issues. The Commission resolved that small farms of the future will become stronger and will thrive, using farming systems that emphasize the management, skill, and ingenuity of the individual farmer.

They envisioned a competitive advantage for small farms realized through a framework of supportive, yet responsible, government and private initiatives, the application of appropriate research and extension, and the stimulation of market opportunities. The proposed North Central Regional Center for Small Farms and Sustainable Communities (NCRCSFSC) will help turn the resolve and vision of the Small Farm Commission into tangible reality for small farms and rural communities in the North Central Region.

Work of the Center will focus specifically on the research and outreach goals of the Small Farms Commission report. The

Center will conduct appropriate research and outreach activities needed to serve the needs of families on small farms. It will help to establish the future generation of farmers through appropriate education and information programs for beginning farmers. And it will support more economically viable small farms as a means to building more socially and ecologically sustainable rural communities. The Center will represent an important step toward effectively implementing the recommendations of the Commission report.

Lincoln University, in Jefferson City, Missouri, has traditionally been involved with a Small Farm Family Program (SFFP) that has focused its attention primarily on providing assistance to the hard-to-reach and under-served families on small farms. Thus, the proposed North Central Regional Center would be located at Lincoln University.

**LOCAL COMPOSTING: AN
ALTERNATIVE TO COMMERCIAL
POTTING SOIL USING
CHRYSANTHEMUMS**

John Delly
Missouri

My poster will be a photo portfolio of procedures, problems, and plant quality at the various stages of growth of chrysanthemums. I will highlight the differences between mums grown in straight compost with organic fertilization, mums grown in half compost and half commercial potting soil, and mums grown in straight commercial potting soil. I will also highlight the differences between organically grown mums and synthetic fertilizers.

**OVERSEEDING LEGUMES TO
INCREASE PRODUCTIVITY
OF PASTURES
IN WEST CENTRAL
MISSOURI**

Gary Ogg and Gary Lesoing
Ray County, Missouri

An on-farm research and demonstration project was initiated in the spring of 1999 to evaluate the feasibility of overseeding different species of legumes into cool-season pastures in west central Missouri. This project was funded through the Missouri Sustainable Agriculture Demonstration Program.

In February of 1999, the following eight species of plants were overseeded into a fescue-bluegrass-orchardgrass pasture: Marian lespedeza, birdsfoot trefoil, Ladino clover, red clover, Kura clover, Puna chicory, alfalfa, and Berseem clover. Grass was grazed down prior to seeding to provide better seeding conditions. In early April, plots were fenced off to allow germination and growth of the young seedlings. In mid May, plots were harvested to determine forage productivity. Summer and fall harvests provided annual forage productivity evaluation.

Forage will be analyzed for quality so that comparisons can be made between species. Stand establishment will be contrasted and compared for the different legumes. First harvest results indicated significant competition from native white

and red clover in the pasture. Growing conditions were ideal in the spring of 1999 for establishment of new legumes in the pastures, but the native clover also flourished under these conditions. Following first harvest, plots were again fenced off to allow for re-growth.

In the spring of 2000, this project will be repeated in another pasture. Forage productivity, quality, and stand establishment and persistence will be monitored at both locations in 2000 and 2001. The feasibility and economics of overseeding will be analyzed in the fall of 2001.

SMALL GRAINS AS COVER CROPS FOR EROSION CONTROL AND FORAGE IN WEST CENTRAL MISSOURI

Bob Shrunk and Gary Lesoing
Ray County, Missouri

A project was initiated in the fall of 1999 to evaluate the use of small grains as cover crops following soybeans in west central Missouri. This on-farm demonstration project was funded through the Missouri Sustainable Agriculture Demonstration Program. Winter wheat, barley, rye, and triticale were no-till drilled into stubble following soybean harvest in the fall of 1999. Residue cover, forage productivity, and forage quality will be measured on each small grain in the fall and spring. Following burn-down, corn will be planted into the small grain stubble in the spring of 2000. The effect of the small grains on corn grain yields will be measured in the fall of 2000. This procedure will be repeated on another field in the fall of 2000, with similar measurements conducted in 2001 on forages and the subsequent corn crop.

These systems will be compared to the conventional corn and soybean rotational system. The productivity of this integrated forage-row crop system will be evaluated, and the economics of this system for west central Missouri will be analyzed.

PRODUCTION AND MARKETING STRATEGIES FOR THE SMALL-SCALE OSTRICH OPERATION

Alan Fear
A-Squared Enterprises, Inc.,
HCR 1 Box 73,
Hermitage, Missouri 65668-9610

This project was proposed as a method to assist small-scale ostrich producers to introduce ostrich meat as a sustainable, value-added product to local markets; develop production, processing, distribution, and marketing strategies; and finally, to provide a methodology that prospective producers can adopt for their own alternative enterprise.

In order for me to gather information about marketing, I participated in the Ozark Food and Equipment Show in Springfield, Missouri, and the Best of America Expo in Kansas City, Missouri. At both shows, I demonstrated some cooking techniques and discussed, in depth, the advantages of eating ostrich meat to the public, chefs, and buyers. Because of the Kansas City show, I was asked to participate in a live broadcast with Rich Hawkins at WHB radio. During that interview, I explained my views of the ostrich industry and some of the needs of small-scale producers.

I have also attended the Agricultural Marketing Outreach Workshop that was held in Memphis, Tennessee. At that con-

ference, I participated in the Direct Marketing Today Focus group that was sponsored by the USDA Agricultural Marketing Service.

Recently, as president of the Greater Missouri Ostrich Association, I have embarked on the development of a cooperative effort by the producers who belong to the association to build a processing plant in Missouri specifically for ostrich.

ARTIFICIAL INSEMINATION OF HONEYBEE

Troy Hart
Missouri

It is common to artificially inseminate cows and other types of livestock to be sure that various desirable traits are carried forward in the following generations. In fact, many of the advances in most types of agriculture have come about by controlling the mating process to eliminate undesirable traits.

Honeybee queens naturally mate in flight, and it is impossible to fully control mating for honeybees in the wild. Artificial insemination of honeybees has mostly been used by researchers because it was not so easy to do without some equipment, and the equipment is expensive. However, the new equipment is easier to use and can be used by beekeepers if they have the equipment and a little training. Currently there is no one I am aware of in Missouri who has the equipment or can perform these techniques. I think that artificial insemination is useable by small-time beekeepers.

PASSIVE ANNUAL COLD STORAGE

Michael Lane
8384 St. George Road,
Hartville, Missouri 65667

This project is to create a walk-in freezing apparatus for freezing farm produce - but the use is certainly not limited to that. Just as a ground source heat pump or passive solar house can utilize earth thermal mass for energy storage, so can it be used for cold storage. This project seeks to determine that if by insulating and protecting from the elements a large amount of earth, and running ventilation tubes through this thermal mass, it will have the same temperature as the average winter air temperature.

The initial costs of excavation and construction of this passive freezer are equal to a small commercial freezer (approximately +ACQ-5000). Once completed, the passive freezer will require no purchased energy. It can be built where electricity is unavailable or cost-prohibitive to provide. Also, the maintenance costs of commercial freezers and the potential of product losses during a failure are not a factor in this design.

The entire project site is 2,500 square feet (50 feet square) surrounded by a French/Swedish drain for surface water control. In the center of the site, we have constructed of concrete block a 14-foot diameter cylinder buried in the ground. To the base of this cylinder, we attached ventilation tubes that penetrate the surround-

ing soil and reach the surface at the site perimeter. When finished, the site will be covered in sawdust, a plastic vapor barrier, and a thin layer of concrete. An access port cover will be built to control ingress/egress to the cylinder.

ALTERNATIVE CROPS FOR WEST CENTRAL MISSOURI

Lynn Rogers and Gary Lesoing
Ray County, Missouri

An on-farm demonstration project was funded through the Missouri Sustainable Agriculture Demonstration Program to evaluate alternative crops for west central Missouri. Low commodity prices for corn and soybeans have prompted farmers to evaluate alternative crops as a method to increase farm income. Wet conditions in the spring and early summer sometimes delay planting. Alternative short-seasoned crops may provide greater return than soybeans under mono-cropped or double-cropped situations.

In the spring of 1999, buckwheat, sunflower, and pinto beans were planted in low-lying bottom land in Ray County. Crops were monitored in the summer of 1999 for their adaptability, and grain yields were to be measured in the fall. The adaptability and economics of these alternative crops will be evaluated following harvest.

In 2000 and 2001, double-cropped wheat-buckwheat, wheat-sunflower, and wheat-pinto beans will be compared with mono-cropped soybean, sunflower, pinto beans, and buckwheat. Crop yields and economics of these alternative-cropping systems will be evaluated and analyzed for west central Missouri.

MISSOURI SMALL FARM FAMILY PROGRAM:

*Assisting Families To Sustain
On Small Farms*

K.B. Paul, Tory Shade, Jim Thompson, and J.C.
Owsley
Cooperative Extension,
Allen Hall, Lincoln University,
Jefferson City, Missouri 65102-0029

Small farms account for a large share of farms in Missouri. We subscribe to USDA's working definition of a small farm as found in the 1981 Farm Bill (Public Law 97-98) which is: "any farm (1) producing family net income from all sources (farm and non-farm) below the median non-metropolitan income of the state, (2) operated by a family dependent on farming for a significant though not necessarily a majority of its income, (3) on which family members provide most of the labor and management."

We estimate that the present average total income for small farm families in Missouri is less than \$40,000. University Outreach and Extension's Small Farm Family Program (SFFP) offers assistance to small farm families, especially socially disadvantaged families who want to improve their income and quality of life.

Educational Assistants (EAs) are the key people for making this program successful. Hired from the same community where they work with the families on a one-on-one basis, EAs assist in setting up goals, and they provide all necessary assistance to accomplish them. A survey is

being planned to determine the extent to which farm families are benefiting from the program.

AFRICAN-AMERICAN SMALL FARM SUCSESSES:

A Case Study Of Policy Impact

J.V. Worstell and Van Ayers

Delta Enterprise Network,

920 Hwy 153, Almyra, Arkansas 72003

Beginning with a 1/8 inheritance of 18 acres, one of the most successful African-Americans in the country believes he achieved his success by understanding the core assumptions of the government and the non-profit farm policy. He now raises rice, soybeans, and wheat on land farmed by nearly 200 black families when he was growing up. He believes he survived and prospered because he recognized the policy assumption that farmers should produce least-cost raw commodities. He believes many more small farms will thrive if the "government/non-profit complex" could let the initiative and innovation of rural people be the heart of rural economic development.

Much current rural development policy is to hire more bureaucrats to bolster local power structures while farms and cooperatives continue to fail. Instead, let us adopt an approach proven successful in Australia, New Zealand, North Dakota, and Minnesota. The first rule of this approach is to look for entrepreneurs with deep commitments to new business ideas. To explore these ideas and fan this commitment, the key components are: enterprise facilitation, marketing skills development, and integrative research. Fulfilling the potential of this approach for small

farms will include fundamental undergraduate curriculum reform. Farmers are required to be businessmen, but agriculture schools provide no training in such business skills as product marketing. Details are available on our Web site: www.deltanetwork.org.

FARM INCUBATOR PROGRAM AT THE UNIVERSITY OF MINNESOTA

Nigatu Tadesse, Warren Sifferath
and Bill Wilcke
University of Minnesota
St. Paul, Minnesota 55108

Refugees who have been admitted to the United States in the past 25 years due to various conflicts in their countries of origin frequently have an agrarian background. In the Twin Cities metropolitan area there is a significant group of people attempting to utilize agriculture as a means of self-sufficiency for themselves and their families. Some Southeast Asian immigrants, primarily Hmong families, have become market gardeners by leasing and purchasing properties around the Twin Cities on which they grow vegetables to sell at farmers markets. There is also a growing interest by many newer residents from Latino and East African communities to utilize their farm skills to provide food for their families and other immigrants from their cultures, and as an avenue for self-sufficiency.

New farmers or new immigrants choosing to use agriculture as a means of self-sufficiency often have limited resources and skills needed to succeed in American agriculture. Most new immigrants desiring to farm have difficulty finding small acreage to begin farming and have little or no farm machinery to prepare the soil. Moreover, new immigrant farmers are often a challenge for extension outreach

and economic development programs due to language and cultural barriers.

The University of Minnesota has initiated a new farmer training program called the Farm Incubator Program. This program was established to assist primarily new immigrants in the Twin Cities metropolitan area who will transition into small-scale farm operations.

The overall objective of the program is to provide hands-on and class-based agricultural education for new immigrant farmers who will transition onto their own farms after completing a five-year training program. Educational opportunities for trainees include soil fertility, pest control, post harvest handling, farm management, and marketing.

Program participants have gained remarkable skills from workshops and training sessions organized by the program. Extension educators and campus-based faculty have provided special training on organic vegetable production, pesticide safety, value-added product development and marketing, soil sampling and fertility management, and integrated pest management. It is envisioned that with strong support of public and private organizations, this unique program will serve as a model for training new/immigrant farmers who are eager to take advantage of opportunities and to tackle challenges to become tomorrow's American family farmers.

AN ASSESSMENT OF FARM INJURIES AND SAFETY PRACTICES IN MISSISSIPPI

Carey L. Ford and Terence L. Lynch
Alcorn State University
Alcorn State, Mississippi

Agriculture - the most dangerous industry - employs more than 30 percent of Mississippi's workforce. Records from the Mississippi Cooperative Extension Service indicated that 18 tractor deaths occurred in 1997, an all-time record, and two additional deaths involving other farm machinery. This study was designed to determine the magnitude of farm injuries and the utilization of educational programs to reduce farm injuries in Mississippi. More specifically, the investigation was designed to:

- identify the types of farm-related injuries that have occurred on farms;
- determine the safety practices of farmers using tractors and other farm equipment;
- assess the effectiveness of farm safety programs; and
- determine and describe the demographic characteristics of the respondents.

The study targeted Mississippi counties with an African-American population of 40 percent or more, which totaled 34 counties. Nearly 51 percent of the farmers surveyed completed the instrument. Major findings were:

- 49 percent of the respondents were Caucasians and 45 percent were African-Americans;
- 93 percent of the respondents had medical insurance and 46 percent had liability insurance;
- 68 percent of the respondents had sustained injuries due to scrapes and 57 percent had injuries due to slips and falls;
- 61 percent of the respondents had PTO shields on their tractors and 35 percent had first-aid kits.

Based on the number of deaths and injuries that have occurred on farms, there is a clear need for educational programs promoting farm safety practices.

COMMUNITY-BASED PROJECTS TO BUILD HEALTHY SMALL FARMS AND RURAL COMMUNITIES

Wyatt Fraas and Kendall Scheer
Center for Rural Affairs,
Walthill, Nebraska 68067

The Center for Rural Affairs has been supporting rural communities and family farms through its programs for 25 years. We use a mix of service, research, education, and advocacy to foster citizen participation, environmental stewardship, and rural development. Two of our project areas exemplify our approach:

The Nebraska Ag IMPACT Project assists local groups with participant-led projects to improve their communities and farms/ranches. IMPACT groups receive cost-share and staff assistance to conduct on-farm research, secure financial and technical resources, hold educational and demonstration events, and perform community-betterment activities. IMPACT groups have reported significant leadership development, improved farm profits, decreased erosion and farm chemical use, and widespread adoption of new practices.

The Rural Enterprise Assistance Project (REAP) is a micro-business loan and technical assistance provider to rural areas where self-employment is the primary source of jobs. "Associations" of small or prospective businesses administer revolving loan funds and develop business-training programs for members. Since 1991, REAP associations in Nebraska communi-

ties (and adjacent areas of IA, KS, and SD) have assisted 800 businesses with 190 loans for \$350,000 with less than a 2% default rate. Additional REAP activities include a program for school-based entrepreneurial education and a series of summer "camps" for youth to explore entrepreneurship.

DIRECT MARKETING TODAY -

Challenges And Opportunities

Monika Roth, Cornell Cooperative Extension; Nelson Bills, Department of Agricultural, Resource and Managerial Economics, Cornell University; and Jane Maestro-Scherer, Consultant, Ithaca, New York

To understand issues of concern and to strengthen opportunities for farmer to consumer direct marketing, a focus group study was initiated by the USDA Agricultural Marketing Service. Five focus group meetings were held (Dec. 98, Jan. and Mar. 99) in 3 locations to gather input from a diverse group of farmers and direct marketing facilitators. Marketers included both experienced operators and limited resource farmers with little or no direct marketing experience. Facilitators were represented by individuals from state departments of agriculture, extension, academia, non-profits, and grower associations. Input was gathered from 40 facilitators and 27 marketers from 30 states via pre-, post-, and follow-up surveys, as well as from focus group meetings.

Pressing issues were identified. Of greatest concern were costs and returns, financial capacity, technical assistance/grants, and the overall regulatory environment. Of lesser concern were marketing skills, information/networking, consumer interest, seasonality, and insurance. Facilitators seek information that enhances their ability to assist marketers and documents the significance of direct marketing. Marketers want information

that helps them make better business decisions and increase income.

Possible responses were identified: information clearinghouse; relevant regulations; better information dissemination; relevant research; promotion and consumer education; how-to information; performance standards; association development; and grant funding. Increasing consumer demand through innovative producer-consumer linkages was seen as key to future direct marketing success.

SUCCESSFUL VENTILATION OF TWO-STORY BARNs

Roger Bender, Ohio State University Extension
R. R. Stowell, Ohio State University

Animal health and diseases are influenced by air quality, which is directly related to ventilation. Properly sized and managed ventilation openings continuously replace contaminated air with fresh outside air to help control relative humidity and reduce the concentration of pathogens and other air pollutants.

Many existing livestock barns in the Midwest are two-story facilities, creating significant challenges to ideal natural ventilation. While these facilities may be aged, farmers are often reluctant to stop usage and are likely unwilling to invest much money in redesigning them, particularly to provide an open ridge. A viable alternative to an open ridge may be a chimney or similar design.

Extension education resulted in such adaptations to more than 20 barns in western Ohio. Objectives of on-farm consultations were to encourage livestock managers to utilize chimney ventilation and to improve the environment for animals living in the barns.

Results have been encouraging. In all modified structures, farmers report less bedding used with little or no condensation under roof lines. Swine finishers indicate fewer medications were needed for respiratory problems and less piling of pigs in large group pens. Dairy managers say maternity pens stay drier, cows better utilize free stalls, somatic cell counts are lower, and a reduced incidence of mastitis is experienced. Beef and sheep producers report fewer respiratory problems and increased survival rates of calves and lambs. Odor in modified structures has also been

reduced, providing better working conditions for management.

A SUCCESSFUL SURVEY METHOD TO BENEFIT FARMERS AND CONSUMERS

Larry Lev and Garry Stephenson
Oregon State University Extension Service

Gathering information to help small farmers improve marketing to consumers requires quick, inexpensive, and reliable survey methods. We have discovered that this type of research is not hard to do. When standardized methods are developed and followed, one can gather information that people can use.

Obtaining research information from busy farmers market shoppers has been easy for the researchers and entertaining for consumers by using the DOTS method (Lev, et al, 1995). DOTS surveys record questions and provide a selection of answers on flip chart paper. DOTS survey participants place a stick-on label "dot" on an appropriate answer.

During the summer of 1998, we investigated the economic impact of four farmers markets in the Corvallis and Albany area. DOTS survey questions addressed how much money consumers spend, their intent to shop in an associated downtown area, and other questions. Typically, three DOTS questions were hung on flip charts and consumers were approached by researchers to participate in the survey. Refusals were recorded. Response rates were over 90%. When surveyed about the method, 94% of the participants (n=162)

said they preferred or strongly preferred the DOTS method to a written questionnaire. Consumers spend mere seconds completing this type of survey and are generally very happy to participate. The research has provided important data for farmers market managers, farmer/vendors, and the local government/business community.

**PENN STATE'S
AGRICULTURAL
ALTERNATIVE (SMALL AND
PART-TIME FARMING)
PROJECT**

George Greaser
Penn State University College of Agriculture
University Park, Pennsylvania

In 1993, the Penn State University College of Agriculture realized that county agents were getting requests for information on non-traditional agricultural enterprises targeted for small and part-time farmers.

From that time we started developing 4- to 8-page leaflets on as many alternatives as time allowed, with priority to enterprises that are feasible for Pennsylvania. At present we have finished 51 publications and have a Web site developed for distribution of these materials. We are also developing a higher quality program for our Web site that was ready for demonstration at Penn State's Ag Progress Days in August.

The subject matter covered by these publications (and the number of each) is: sheep (5), goats (2), exotic livestock (5), rati (3), beef (3), dairy (2), game birds (6), poultry (2), aquaculture (1), small fruits and vegetables (13), specialty (4), and others (5).

These publications are presently being used on five continents and in 17 countries and 22 states. More than 300,000 hard copies have been requested and delivered

by the college. We feel the program has been very successful.

We are requesting a poster booth for two main reasons; the first is for us to advertise to as many persons as possible on how to obtain our publications. The second reason is to introduce the materials to the private sector.

RESEARCH NEEDS OF SMALL FARMERS IN TENNESSEE

S.P. Singh, F. Tegegne, E. Ekanem,
Muhammad, S. Comer, and A. Akuley
Tennessee State University, Cooperative
Agricultural Research Program
3500 John Merritt Blvd.,
Nashville, Tennessee 37209-1561

Small farmers are important in American society and economy. They account for 42% of all farm receipts. Studies by the USDA and others continue to emphasize the importance of such farms. However, to ensure their viability under changing regulations, new technology, and increasing globalization, key problems facing small farmers have to be identified and addressed. The 1998 Report of the USDA Commission on Small Farms stresses the need for special considerations of such problems.

Given that not all problems are equally important and resources are limited, it is essential to establish priorities in terms of which problems should be focused upon. This poster is aimed at achieving this by conducting a survey of extension and community leaders in Tennessee counties. A survey questionnaire will be developed and administered with assistance from Cooperative Extension Program at Tennessee State University. Analysis of the data is expected to generate grassroots-based assessment of the research needs of small farmers in the state.

NATIONAL PHOTOS OF SARE FARMERS -

Gifts And Graces Of The Land

A Traveling Photo Exhibit
by Cynthia Vagnetti

The words of farmers and ranchers inspire me and instruct my work as a documentary photographer. In 1987, Denton Schwartz, an Illinois farmer, took me to the edge of a freshly plowed field and pointed to the horizon, saying, "There's an education out there."

From this farmer's story, my graduate thesis took shape in comparing an industrial agriculture world view to an emerging agriculture world view that protects resources and enhances society.

Since my graduate work, I have devoted 12 years to documenting people all over the U.S. who are advancing bold new ideas. I use black-and-white photography because it is an integral part of the documentary tradition, and I use photographs as a tool to listen for the stories within stories. I participate in the lives of the people I photograph, observing their daily lives, and listening to their hopes and visions for economic stability, self-reliant food systems, healthy ecosystems, and vital communities.

This style of social reportage is based upon the methods of the 1930's Farm Security Administration photographer Dorothea Lange. She is known for capturing the spirit of the people she pho-

tographed and letting them tell their stories in their own words. The role of Lange, in part, was to educate the public about the social experience and vital character of the people in rural America. Following this tradition, I wish to honor the people living close to the land - in print, on television, and on the World Wide Web.

I have traveled more than 100,000 miles and heard more than 100 stories of "applied scientists" who have similar core values and are dedicated to finding solutions that work. Listen to the people creating new traditions in American agriculture.

CLALLAM COUNTY SUSTAINABLE SMALL FARM INCUBATOR AND DEMONSTRATION PROGRAM

Curtis E. Beus, Chair
Washington State University Cooperative Extension, Clallam County

With funding from the Washington State University Department of Ecology and USDA/CSREES, Washington State University Cooperative Extension of Clallam County is establishing an innovative and exciting new program. It has four primary objectives:

1. help those interested in starting small-scale farming enterprises to do so successfully;
2. educate farmers and landowners about sustainable farming systems for small-scale farms that conserve water and protect water quality;
3. demonstrate new, high-value crops and farming systems appropriate to our region; and
4. educate the general public about the importance of agriculture for the area's economy, culture, quality of life, and environmental integrity (Clallam County is losing farmland to development at an alarming rate).

Beginning in September 1999, a group of about 15 people began receiving 120 hours of training, a set of valuable resource materials, a mentor to assist them, and in some cases limited financial assistance, to set up pilot projects that integrate

GROWTH OF MEDICINAL HERB INDUSTRY IN THE PACIFIC NORTHWEST

Charles Brun

Washington State University Cooperative
Extension,

11104 NE 149th St.,

Brush Prairie, Washington 98606

the production of high value crops with sustainable farming systems designed to conserve irrigation water and protect water quality (critical issues in our county due to the recent listing of salmon as an endangered species).

Some of these pilot projects will be set up at Robin Hill Farm Park, a new county park, and others will be on participants' properties. In return for the training and assistance participants receive, they will help gather data on alternative crops, help set up trials and experiments, assist in creating interpretive displays, participate in educational workshops and field days, etc. This project is funded for two years, but it is hoped it will continue beyond the life of the initial funding grants.

The sale of medicinal botanicals has reached the \$4 billion mark in the United States and represents the fastest-growing segment of mass marketing (supermarket, drug, and natural food stores). Americans have clearly embraced the world of botanicals as replacements for prescription medicines. Farmers in the Pacific Northwest (Oregon, Washington, Idaho) have only recently learned of the potential for herbs as lucrative alternative enterprises for their rural acreages. Herb production is both capital and management intensive, requiring significant assistance by university horticulture advisors.

The first crop of pasture-cultivated ginseng was established in 1990. The Northwest's long mild growing season (as opposed to colder temperate climates) has resulted in production of significantly larger roots that can be harvested fresh in the winter. Gross returns of more than \$100,000/acre have been achieved. Other potential lucrative crops that are now being planted include Black Sampson cone-flower (*Echinacea angustifolia*), goldenseal (*Hydrastis canadensis*), Black cohosh (*Cimicifuga racemosa*), and ginkgo (*Ginkgo biloba*).

Extension outreach support for the development of the herb industry has included posting a complete guide to ginseng production on the Internet; hosting classes, conferences, and tours for new farmers; and assisting producers in forming a ginseng growers' association.

PUGET SOUND FRESH

Steven Evans
King County Agriculture Programs,
201 South Jackson St., 6th Floor,
Seattle, Washington 98104

The world consists of finite resources. Preserving and protecting our agricultural heritage is critical for our survival. We understand that educated consumers are the most effective agents of change and stability. The goal of the Puget Sound Fresh program is to maintain and enhance agriculture in the Puget Sound region by encouraging and increasing the consumption of food grown or gathered in the 12 counties that border the Puget Sound.

Other goals:

- Maintain and Increase the number of farmers in the Puget Sound region by expanding access to markets.
- Ensure a high level of food security and safety by maintaining a reliable supply of locally grown food.
- Maintain the rural character of the Puget Sound region and ensure a high quality of life for all residents in the area.
- Educate the public about the importance of local agriculture.
- Develop an organization of growers, retailers, and consumers to manage the program into the future.
- Develop a stable funding base to ensure that the Puget Sound Fresh mission will be realized into the future.

Some local growers export their prod-

POLICIES AND PRACTICES IN FOOD FARMING SYSTEMS

Elizabeth Bird and Blake
CSARE
Wisconsin

ucts to other areas of the country and the world. It is unlikely any increase in demand for local products will create a major shift in these existing distribution systems. Most growers will maintain their existing markets while increasing their production to accommodate any new opportunities. Expanding local markets for local products encourages new operations to emerge. Several new farms that include a tomato grower in Redmond and two new vegetable farms in Enumclaw evidence this trend.

Interest in locally grown products is growing. The increasing number of farmers markets, CSAs and other direct marketing venues in the region evidences this trend. However, most consumers have little knowledge on how to identify and access locally grown products. In most stores, including many farmers markets, locally grown products are not identified. Puget Sound Fresh is in a unique position to assist with this effort to provide consumer information.

CSARE's niche food and farming systems are shaped by agricultural research and education policies and practices. CSARE's members share the conviction that the practice of agricultural research and education must change to realize a vision of sustainability and equity, as well as an increased quality of life.

To achieve this vision, CSARE fosters collaborations among people inside and outside of research institutions who share these common values. Our core function is to link farmers, researchers, advocates, educators, students, and others in "learning partnerships." We define these as research and action collaborations, mutual learning and mentoring opportunities, and information exchanges.

Together we have the power to create food and farming systems that are ecologically renewable and socially just. There are other organizations and networks that address aspects of CSARE's goals. However, their primary constituencies are private sector activists, non-profit advocates, and professional organizations. CSARE serves to bring together a broader range of food and agricultural professionals, including academic and government policy makers.

No other organization is as inclusive as CSARE. We engage diverse audiences as

full partners in the sustainable agriculture research and education movement.

Moreover, no other organization gives equal value to the interests of activist and scientists as well as to those needing professional development.

2nd National Small Farm Conference Attendees

Curtis W. Absher
University of Kentucky
309 WP Garrigus Bldg
Lexington, KY 40546-0215
(606) 257-1846

Aloysius Kwesi Acouah
c/o Ministry of Food & Agriculture
Box M 37
Accra, Ghana

Katherine L. Adam
Hotz Hall, Box 3657
Fayetteville, AR 72202
(501) 442-9824

Usman Adamu
715 N 40th St. #304h
Grand Forks, ND 58203

Emmanuel Ajuzie
Cooperative Extension
303 D Allen Hall
Lincoln University
Jefferson City, MO 65102-0029

Dayle Aldridge
PO Box 100
Taft, OK 74463

Jerry Keith Alldredge
425 N. 15th Ave
Greeley, CO 80631
(970) 356-4000

Roscoe C. Allen
USDA/NRCS
100 No. 8th St., Suite 224
E. St. Louis, IL 62201
(618) 271-9540

Susan Allen
Massachusetts Dept. of Food and Agriculture
100 Cambridge St.
Boston, MA 02202
(617) 626-1751

William Ansah
c/o Ministry of Food & Agriculture, Box M 37
Accra, Ghana

Tony Antonacci
1550 East Main
Salem, IL 62881
(618) 548-1337

Mark Appiah
c/o Ministry of Food & Agriculture, Box M 37
Accra, Ghana

Ebenezer Kwabena Asante
co Minis of Food & Ag., Box M37
Accra, Ghana

Jill Auburn
14th & Indep.. Ave SW, 3868 So. Bldg.
Washington, DC 20250
(202) 720-5203

Karen A. Baase
Cornell Cooperative Extension
PO Box 1209, Eaton St.
Morrisville, NY 13408
(315) 684-3001

Ntam Baharanyi
Dennis K. Baker
700 Wayne St.
Greenville, OH 45331
(937) 548-5215

David E. Baker
2-28 Agriculture Bldg., UMC
Columbia, MO 65211-7300
(573) 882-6385

Tim Baker
PO Box 160
Kennett, MO 63857
(573) 888-4722

Alberta Baker
8177 Tonawanda Creek Road
Lockport, NY 14094
(716) 433-5658

Joyce Marie Baker
6161 Miller Road
Lockport, NY 14094
(716) 433-2715

K.R. Baldwin
North Carolina State University
1225 S 3rd St.
Mebane, NC 27302

James Bangert
HC1 Box 412A
Coldwater, MO 63964
(573) 224-3828

Michael Barbour
Kentucky State University
Frankfort, KY 40501

Kasturi Basu
1400 Independence Ave, SW
Washington, DC 20250
(202) 720-5238

Lisa Bauer
PO Box 83040
University of NE, 13A Activities Bldg.
Lincoln, NE 68583
(401) 472-0265

Kelly Beardon
Valley Sierra SBDC
1012 11th St., Ste. 400
Modesto, CA 95354
(209) 526-1777

Donna Beauchamp
7205 Marine Rd
Edwardsville, IL 62025
(618) 656-7300

Alice E. Beetz
NCAT/ATTRA
Box 3657
Fayetteville, AR 72701
(501) 442-9824

Mike Belken
3082 Highway OO
Fredericktown, MO 63645
(573) 783-7892

Arthur Bell
1700 S Benbow Rd.
Greensboro, NC 27406

Barbara Bellows
332 Riley Robb Hall, Dept of Ag
Ithaca, NY 14853
(607) 255-4537

Roger Bender
810 Fair Rd
Sidney, OH 45365
(937) 498-7239

Joan Benjamin
200 Mumford Hall, UMC
Columbia, MO 65211
(573) 445-2194

Laura Ann Bergman
Sustainable Ag. Program
University of MO-Columbia
Columbia, MO 65211
(573) 884-3794

Kim Berry
3 Augusta Court
Greensburg, NC 27455

Sue Bertrand
1015 Louisiana St.
Little Rock, AR 72202-3815
(501) 907-2656

Curtis E. Beus
PO Box 863
223 E. Fourth St.
Port Angeles, WA 98362
(360) 417-2280

Mike Bevins
502 E. 9th St., Wallace State Office Bldg.
DeMoines, IA 50319
(515) 281-5402

Peter Bierman
1864 Shyville Rd.
Piketon, OH 45661-9749
(740) 289-2071

DeEtta Bileck
20415 County Road 2
Aldrich, MN 56434

Larry Biles
USDA/CSREES
3416 Waterfront
Washington, DC
(202) 401-4926

Angie Billups
1118 Greensboro Ave. Fed. Bldg Rm 233
Tuscaloosa, AL 35401

Elizabeth Bird
1450 Linden Dr. Rm 146
Madison, WI 53706

Wade B. Bitner
Utah State University Extension
2001 S. State #S-1200
Salt Lake City, UT 84190-2350
(801) 468-3170

Allan Boesch
12651 State Rt. F
Rolla, MO 65401
(573) 364-3147

Rebecca Bond
1411 K. St. NW, Ste. 901
Washington, DC 20005
(202) 628-7160

Nan Bonfils
2104 Agronomy Hall, ISU
Ames, IA 50011
(515) 294-8512

Thurman Booth
RM 55 600 W. Capitol Ave.
Little Rock, AR 72120

Marion Bowlan
2708-A North Colebrook Rd
Manheim, PA 17545

Errol R. Bragg
1400 Independence Ave. SW
Room 2642, South
Washington, DC 20250
(202) 720-8317

Dow Brasiley
1400 Indep. Ave. SW
Washington, DC 20250

David K. Brauer
6883 South State Hwy 23
Booneville, AR 72927-9214
(501) 675-3834

Melvin Brees
#1 Courthouse Square
Fayette, MO 65248
(660) 248-2272

Hal Brockman
Cooperative Forestry
Washington, DC 20090-6090
(202) 205-1694

Mike Brokaw
2715 S. Fourth St.
Springfield, IL 62705
(217) 525-0398

Henry M. Brooks
University of Maryland-Eastern Shore
Richard A. Henson Center, Room 2122
Princess Ann, MD 21853
(410) 651-6206

Malcolm Broome
PO Box 9555
Mississippi State, MS 39762
(662) 325-8023

Lance Brower
49 West 1st North
St. Anthony, ID 83445
(208) 624-3102

Kornel Brown
Racine City UWEX Office
14200 Washington Ave
Sturterant, WI 53177
(414) 886-8460

Maurus Brown
1495 W. Longview Ave, Suite 206
Mansfield, OH 44906
(419) 747-8755

Michael Brown
1411 K Street NW, Ste. 901
Washington, DC 20005
(202) 628-7160

P.W. Brown
Alabama Cooperative Extension
202 Duncan Hall-ACES
Auburn University, AL 36849
(334) 844-4443

Robin Brumfield
55 Dudley Rd.
New Brunswick, NJ 08901

Charles A. Brun
11104 NE 149th St., Bldg. C
Brush Prairie, WA 98606
(360) 254-8436

B. Marie Buchanan
1900 Independence
Washington, DC 20250

Rachel Buie
301 Liberty Rd.
Natchez, MS 39120
(601) 445-8202

Carolee Bull
1636 E. Alisal St.
Salinas, CA 93905
(831) 755-2889

Theodis Bunch
101 East Capitol Ave. Ste212
Little Rock, AR 72201

Ben F. Burkett
Federation of Southern Co-ops
PO Box 22786
Jackson, MS 39205
(601) 354-2750

Arlis Burney
143 Filley Hall
Lincoln, NE 68583-0928
(402) 472-8930

Carl Butler
USDA Agricultural Marketing
West Virginia State College
Morgantown, WV

Harold Butler
USDA/FSA
1215 Fern Ridge Pkwy, Ste. 212
St. Louis, MO 63141

Carrol Calkins
5230 Konnowac Pass Rd
Wapato, WA 98951

Chris Campany
PO Box 3976
Baton Rouge, LA 70821
(225) 336-9532

Marjorie Campbell
206 Foster Hall, Lincoln University
Jefferson City, MO 65102

Larry Carnahan
PO Box 437
Altmount, Ks 67330

Lawrence Carter
215 Perry Paige Bldg.
Florida A & M University
Tallahassee, FL 32307
(850) 599-3546

Timothy Carter
130 Roberts Ln.
Alexandria, VA 22314

Cristiana Carusi
1200 North St., Suite 610
Lincoln, NE 68508
(402) 471-0817

Deborah Cavanaugh-Grant
PO Box 410
Greenville, IL 62642
(217) 968-5512

Edwin Chavous
Kentucky State University
Frankfort, KY 40501

Duncan M. Chembezi
Alabama A & M
PO Box 700
Normal, AL 35762
(256) 858-4970

Clyde Chesney
3500 John A. Merritt Blvd.
Nashville, TN 37209
(615) 965-5491

Nathan Chitwood
601 Business Loop 70 West,
Parkade Center Suite 235
Columbia, MO 65203
(573) 876-9320

Raymond Christensen
1 Winners Circle
Albnay, NY 12235

Andrew Christiansen
Box 308
Aurora, NE 68818
(402) 694-6174

Derrick Cladd
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Ronnie L. Clark
102 Randolph Ct.
Stillwater, Ok 74075
(405) 742-1204
Terry Clason

Kimberly Clay
1100 B 12th St. SW
LeMars, IA 51031

Elizabeth ClayPoole
420 E. Main St.
Bataria, Ny 14020
(716) 343-3040

George Clinton
PO Box L 10000 Kingshill
St.Croix, VI 00850

Bill Cobb
3334 W. Main #343
Norman, Ok

Iris Cole-Crosby
Alcorn State University
18600 Hwy 397
Preston, MS 39354
(601) 773-7128

David Coltrain
Dept. of Ag Economics, 303 Waters Hall
Manhattan, KS 66506
(785) 532-1523

Kathy Colverson
3505 SE 20th Drive
Gainesville, FL 32641
(352) 377-2978

Jorge Comas
Portals Bldg. 508
Washington, DC

George E. Conneman
303 Warren Hall
Ithaca, NY 14853
(607) 255-1367

Ralph Crawford
Delware State University., Dept of Ag
Dover, DE 19901
(302) 677-7937

Nancy Creamer
Dept of Horticultrual Sci, Box 7609
Raleigh, NC 27695
(919) 515-9447

Rozier Crew
303 N. Perry-Paige Bldg.
Tallahassee, FL 32307-4100
(850) 561-2191

Roger G. Crickenberger
Campus Box 7602, 213 Ricks Hall
Raleigh, NC 27695-7601
(919) 515-3252

Jack Crofford
Courthouse
Poplar Bluff, MO 63901
(573) 686-8064

Joyce Crouch
8210 Hwy 5
Hartville, MO 65667
(417) 462-3668

Jim Currie
Northern Mairanas College
PO Box 879
Rota, MP 96951
(670) 532-1449

Catherine Cutcher
Rural Action
1 Mound St.
Athens, OH 45710
(740) 593-7490

Magid Dagher
Alcorn State University
1000 ASU Drive, Box #1080
Alcorn State, MS 39096
(601) 877-6449

Nelson Daniels
PO Box 3059
Prairie View, TX 77446-3059
(409) 857-2518

Glen E. Daniels
405 Carter Street
Vidalia, LA 71373
(318) 336-5315

Troy Darden
Cooperative Extension
301 Allen Hall
Lincoln University
PO Box 29
Jefferson City, MO 65102-0029
(573) 681-5587

Kathleen Delate
106 Horticulture Hall
Iowa State University
Ames, IA 50011

Rigoberto Delgado
8125 Freedom Drive
El Paso, TX 79925
(915) 775-0577

Jerry DeWitt
Iowa State University Extension
2104 Agronomy Hall
Ames, IA 50011
(515) 294-1923

Diana Dickens
1000 ASU Drive # 479
Alcorn State, MS 39120

Elbert Dickey
211 Ag Hall, Univ. of Nebraska
Lincoln, NE 68583-0703
(402) 472-2966

Eldon Dilworth
107 N. 4th Street, Courthosue Basement
Edina, MO 63537
(660) 397-2179

Craig Dobbins
Purdue University
1145 Krannert Bldg.
W. Lafayette, IN 47907-1145
(765) 494-9041

Mike Doherty

Samuel L. Donald
Room 1103, Early Childhood Research Center
Princess Anne, MD 21853
(410) 651-6074

Colin Donohue
Rural Action
PO Box 157
Trimble, OH 45782
(740) 767-4938

Ester Doolittle, Jr.
1200 North University Drive
Pine Bluff, AR 71601
(870) 543-8265

Thomas W. Dorn
Box 308
Aurora, NE 68818
(402) 441-7180

Alfonzo Drain
Room 1410, South Building
1400 Independence Ave
Washington, DC 20250-3810
(202) 720-3238

Rex Dufour
NCAT/ATTRA
Box 3657
Fayetteville, AR 72702
(501) 442-9824

Staiglaus J. Dundon
Box 72084
Davis, CA 95617
(530) 756-8518

John Awuku Dziwornu
c/o Min Dept of Food & Agriculture Box M37
Accra, Ghana
(233) 216-7021

Samuel Kwame Dziwornu
c/o Ministry of Food & Agriculture, Box M 37
Accra, Ghana

Denis Ebodaghe
800 9th St., Ste. 3422
Washington, DC 20250-2220
(202) 401-4385

Enefiok P. Ekhanem
3500 John Merritt Blvd.
Nashville, TN 37209
(615) 963-5823

Harold Eli
Kentucky State University
Frankfort, KY 40501

Tavita Elisara
American Samoa Community College
PO Box 5881
Pago Pago, AS 96799
(684) 699-1394

Charles Ellis
880 W. College
Troy, MO 63379
(636) 528-4613

Dave Ellison
3401 SW Van Buren
Topeka, KS 66611
(785) 266-0248

Henry English
PO Box 4913
Pine Bluff, AR 71601
(870) 543-8142

George Enlow
Cooperative Extension
Lincoln University
P.O. Box 29
Jefferson City, MO 65101

E. Nelson Escobar
USDA/CSREES-PAS
Mail Stop 2220, 1400 Independence Ave. SW
Washington, DC 20520-2220

Albert Essel
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Steven Evans
201 S. Jackson St.
Seattle, WA 98104
(573) 296-7824

Ray Evans
PO Box 180
Jefferson City, MO 65102
(573) 751-4115

Jessica Faust
14th Indep. Ave. SW
Washington, DC 20250

Alan Fear
HCR 1 Box 73
Herritage, MO 65668

Chris Feise
PO Box 646230
Pullman, WA 99164-6230
(206) 725-4076

Ray Feldt
R3, Box 264
Stockton, MO 65785
(417) 276-4051

Maribel Fernandez
10 2nd Street N.W. Rm 130
Buffalo, MN 55313

John W. Ferrell
118 S. High Street
Tennessee State University
Winchester, TN 37398
(931) 967-2741

Jon L. Ferris
South Dakota Dept. of Agriculture
523 E. Capitol Ave
Pierre, SD 57501-3182
(605) 773-4022

Judy Ferrura
IAC
Box 1090, Lot 11
San Carlos, AZ 85550
(520) 475-9949

Robert Finley
USDA/FSA
12 Russell
Columbia, MO 65213
(573) 445-7617

Paul Fischer
319 Littleton Rd., Ste. 203
Westford, MA 01886
(978) 692-5163

Dean Fish
2150 North Congress Drive, #106
Nogales, AZ 85621
(520) 761-7849

Caragh B. Fitzgerald
3525-L Ellicott Mills Dr.
Ellicott City, MD 20143
(410) 313-2710

Frank Flavin
Cornell Cooperative Extension
1894 SH 68
Canton, NY 13617
(315) 379-9192

Joe Folsom
410 Farm Credit Svcs. Bldg., 375 Jackson St.
St. Paul, MN 55101
(651) 602-7803

Paula Ford
NCR/SARE
4A Edwards Hall, KSU
Manhattan, KS 66506-4810
(785) 532-5328

Jane Ford-Wilson
3903 Gardenside Drive
Huntsville, AL 35810
(256) 851-5417

Mike Foutch
Rusk Co. Extension Office 311 Mner Ave E S140
Ladysmith, WI 54848
(715) 532-2151

Charles A. Francis
225 Keim Hall
Lincoln, NE 68583-0949
(402) 472-1581

Karen Freiberg
Centre Square West, 1500 Market St.
Philadelphia, PA 19102-2181
(215) 557-8921

Glen Fukumoto
PO Box 208
Kealahou, HI 96750
(808) 322-4892

Jay Fulbright
605 Main St., Suite 203
Arkadelphia, AR 71923
(870) 246-2905

Jim Fuller
14 Independence Ave.
Washington, DC 20013

Karen Funkenbusch
222 AG Engineering Bldg
Columbia, MO 65211

Weyman Fussell
NCAT/ATTRA
Box 3657
Fayetteville, AR 72758
(501) 442-9824

Gladys Gaeke
2373 Pleasant Church Road
Marshfield, MO 65706
(417) 859-2914

Terry Gampert
Box 45
Center, NE 68724
(402) 288-4224

Gwen Garvey
2811 Agriculture Dr, PO Box 8911
Madison, WI 53708-8911
(800) 942-2474

Mark Gaskell
624 West Foster Rd
Santa Maria, CA 93455
(805) 934-6240

Karl R. Gebhardt
85 E. Gay Street
Columbus, OH 43215
(614) 228-3274

Lance Gegner
NCAT/ATTRA
Box 3657
Fayetteville, AR 72702
(501) 442-9824

Herschel George
Kansas State Research & Extension
20 S. Gold
Paola, KS 66071
(913) 294-4306

Terry Gibson
Kentucky State University
Frankfort, KY 40501

James L. Gibson
2820 Walton Commons West Ste 100
Madison, WI 53718
(608) 224-1450

Carol Giesecke
Cooperative Extension
303B Allen Hall
Lincoln University
P.O. Box 29
Jefferson City, MO 65102
(573) 681-5592

Judith Gillan
New England Small Farm Institute
PO Box 937; 275 Jackson St
Belchertown, MA 01007
(413) 323-4531

Deborah Giraud
University of California Cooperative Extension
5630 So. Broadway
Eureka, CA 95503
(707) 445-7351

Leslie J. Glover
PO Box 4913
Pine Bluff, AR 71601
(870) 543-8535

John Glover
402 North Kays Dr.
Normal, IL 61761
(309) 452-2492

Mary Gold
10301 Baltimore Ave., Room 304
Beltsville, MD 20705-2351
(301) 504-6559

R. Edmond Gomez
PO Box 159
Alcalde, NM 87511
(505) 852-2668

Bertram Goodloe
1000 ASU Drive # 479
Alcorn State, MS 39120

Robert Gotkowski
685 Larry Power Rd
Bourbonnais, IL 60914
(815) 937-3233

William J. Gradle
1902 Fox Drive
Champaign, IL 61820
(217) 398-5267

Shelly Gradwell
2104 Agronomy Hall Iowa State University
Ames, IA 50011

Gail Grant
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Sarah Grant
PO Box 477
Dixon, NM 87527

George Greaser
537 Easterly Pkwy
State College, PA 16801
(814) 863-8639

Lane Greer
NCAT/ATTRA
Box 3657
Fayetteville, AR 72702
(501) 575-7570

Judy Grundler
PO Box 630
Jefferson City, Mo 65102

Wilbert Guillory
403 Hwy 744
Opelousas, LA 70570
(318) 948-7604

Steve A. Halbrook
Farm Foundation
121 W. 22nd St., Suite 216
Oak Brook, IL 60523
(630) 571-9393

Ron Hale
2587 HWY OO
Farmington, MO 63640
(573) 756-3666

Alphonso Hall
201 14th st. Yates Bldg 4 sw
Washington, DC 20250

Wayne Hall
2540 St. HWY E
Oak Ridge, Mo 63769

Robert Dean Halman
Maryland Cooperative Extension
PO Box 663
Forest Hill, MD 21050
(410) 638-3255

Randy Halsey
107 Allen Hall
Jefferson City, MO 65101

Hubert Hammer
PO Box L
Columbia, MO 65205
(573) 876-0950

Tom Hansen
833 N. Boonville
Springfield, MO 65802
(417) 862-9284

Jim Hanson
OERD/SIU
150 East Pleasant Hill Road
Carbondale, IL 62901
(618) 536-4451

Thomas Hanson
5600 Hwy 83 South
Minot, ND 58701
(701) 857-7679

Murray Hardesty
829 Clark Hall
Columbia, MO 65211
(573) 882-6586

Wayne D. Harrifeld
3401 SW Van Buren St
Topeka, KS 66611
(785) 266-0248

Alvin Harris
7521 Sledge Rd.
Millington, TN 38053
(901) 872-0696

Mark Harris
1400 Independence Ave., SW
Washington, DC 20250
(202) 720-4214

Wilda Harrison
Cooperative Extension
302B Allen Hall
PO Box 29
Jefferson City, MO 65102-0029
(573) 681-5526

Troy Hart
3738 Hwy 47
Lonedell, MO 63060
(636) 629-5814

Archie Hart
PO Box 27647
Raleigh, NC 27611
(919) 733-7125

Jason Harvey
PO Box 528804
Oklahoma City, OK 73152
(405) 522-5563

Elaine Hahn
USDA/ECS
14th & Indep. Ave SW Rm. 3868 So. Bldg.
Washington, DC 20250
(202) 720-6527

Randall Hawkins
1000 ASU Drive # 479
Alcorn State, MS 39120
(601) 877-6126

Keith Hawxby
University Outreach and Extension
4125 Mitchell Ave.
St. Joseph, MO 64507
(816) 279-1691

Philip Haynie III
PO Box 508
Heathsville, VA 22473
(804) 580-9089

Calvin Head
9381 Hwy 49
Ichula, MS 39169
(601) 235-5710

Michael Heard
103 Allen Hall
Lincoln University
PO Box 29
Jefferson City, MO
(573) 681-5109

Terry E. Heinard
PO Box 657, Kaine Bldg., Rm. 106
Prince Frederick, MD 20678
(410) 535-1521

Bill Helvey
Cooperative Extension
301 Allen Hall
Lincoln University
PO Box 29
Jefferson City, MO 65102-0029
(573) 681-5557

John Hendrickson
Center for Integrated Agriculture System
-UW-Madison
1450 Linden Dr
Madison, WI 53706
(608) 265-3704

Mary Hendrickson
Food Circles Networking Project
106 Sociology
Columbia, MO 65211
(573) 882-7463

Nelson Henry
6010 Choctaw Branch
Philadelphia, MS 39350

Matt Herring
University Outreach and Extension
PO Box 71
Union, MO 63084
(636) 583-5141

Cliff Herron
USDA-FSA
1250 Maryland Ave., SW #508
Washington, MO 20024
(202) 720-7619

George Herschel
20 S Goley
Paola, KS 66071

Sharon Hestvik
USDA/RMA
14th & Independence Ave, SW
Washington, DC 20250
(202) 720-6685

Kristi Hetland
107 Curtiss Hall
Iowa State University
Ames, IA 50011

Duncan Hilchey
216 Warren Hall
Cornell University
Ithaca, NY 14853
(607) 255-4413

Glenwood Hill
PO Box 4061
Fort Valley, GA 31030
(912) 825-6269

Aaron Hinkson
3737 Government St.
Alexandria, LA 71302
(318) 473-7818

Aaron Hinkston
3737 Government St.
Alexandria, LA 71302

Eusebio Hocog
Municipality of Rota Dept. of Lands
and Natural Resources
Rota, MP 96951

Lena Hogan
USDA/AMS
Rm 3510-S
1400 Independence Ave. SW
Washington, DC 20250
(202) 720-8998

Sandra Hodge
203 ABNR
Columbia, MO 65211
(573) 884-6729

Linda L. Hodgins
South Dakota of Agriculture
523 E. Capitol Ave
Pierre, SD 57501-3182
(605) 773-5841

Gary Hoette
211A E. Third
Montgomery City, MO 63361
(573) 564-3733

Mike Hogan
119 Public Square
Carrollton, OH 44615

Lena Hogan
USDA/AMS
Rm 3510-S
1400 Indep. Ave. SW
Washington, DC 20250
(202) 720-8998

Frank C. Holguin
PO Drawer 1059
Los Lunas, NM 87031
(505) 865-9561

Kenneth Holland
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

James R. Hollyer
3050 Maile Way, Gilmore Hall 213
University of Hawaii
Honolulu, HI 96822
(808) 956-8140

Dwight Holmes
P.O. Box 404
Alton, MO 65606
(417) 778-6541

Larry Holmes
USDA/NRCS
6013 South Bldg. Stop 2890
1400 Independence Ave.
Washington, DC 20250
(202) 720-1853

Glyen Holmes
4155 Hollis Dr.
Marianna, FL 32448

Douglas Holt
209 Ag. Eng. Bldg.
University of Missouri
Columbia, MO 65211
(573) 882-1150

James J. Hoorman
22133 T. N. 60
Jenera, OH 45841
(419) 674-2297

Savi Horne
Land Loss Prevention Project
PO Box 179
Duham, NC 27702
(919) 682-5969

O.D. Howard
1000 ASU Drive # 479
Alcorn State, MS 39120

Jerry Howard
PO Box 279
Dexter, MO 63841

Lynn A. Howell
PO Box 50004
Honolulu, HI 96850
(808) 541-2600

Carrie Hudson
PO Box 546
Morongo Valley, CA 92256

Sam Huey
17875 County Rd. 732
Dexter, MO 63841
(573) 624-2993

Carl Hughes
Alcorn State University
1000 ASU Dr. 750
Alcorn State, MS 39096-7500
(601) 877-6525

J.D. Hutcheson
PO Box 65
King William, VA 23806-9737
(804) 769-4957

John R. Hutchison III
PO Box 1112
Caruthersville, MO 63830
(573) 333-0788

Jeff Hyett
IL Sustainable Ag Society
985 W Pershing Ste E-4
Decatur, IL 62526

Gail L. Imig
One Michigan Ave East
Battle Creek, MI 49017
(616) 968-1611

Billie Ingram
415 E. Olive
Bolivar, MO 65613
(417) 326-4916

Oscar Ingram
University Outreach & Extension
S. Hwy A, Box 7
Marshfield, MO 65706
(417) 859-2044

Harold Isaak
607 Hwy 4
Steelville, MO 65565
(573) 743-6298

L.V. Jackson
University of Tennessee
Extension Service
PO Box 523
Covington, TN 38019
(901) 476-0231

Tom Jahns
Alaska Cooperative Extension
43961 K-Beach Road, Ste. A
Soldotna, AK 99669
(907) 262-5824

Rhonda Janke
2021 Throckmorton
Manhattan, KS 66506
(785) 532-0409

Jeff Jobe
USDA Rural Development
873 Federal Bldg.
210 Walnut St.
Des Moines, IA 50301
(515) 284-5192

James Johannes
203 C Culbertson Hall , Box 172230
Bozeman, MT 59717-2230
(406) 994-1750

Carole Johnson
Cooperative Extension
Allen Hall
PO Box 29
Jefferson City, MO 65102-0029

Dale Johnson
18330 Keedysville Rd.
Keedysville, MD 21756
(301) 432-2767

Florine Johnson
USDA/NRCS
100 N. 8th St., Windors Art Medical Bldg
E. St. Louis, IL 62201
(618) 271-9540

Sue Ellen Johnson
Northeast New Farmer Network
c/o NESFI, PO Box 937
Belchertown, MA 01007
(413) 323-4531

Desmond Jolly
One Shields Ave
Davis, CA 95616
(530) 752-7774

Hurley M. Jones
PO Box 392
Dermott, AR 71638
(870) 538-5586

Lynette Jones
1000 ASU Drive # 479
Alcorn State, MS 39120
(601) 877-6554

Roger Jones
PO Box 553
New Augusta, MS 39462
(601) 964-3370

David Jones
PO Box 21928
Greensboro, NC 27411
(336) 334-7734

Vernon Jones
Langston University
PO Box 730
Langston, Ok 73050
(405) 466-3836

Matt Jorgensen
University of Wisconsin Extension
Box 68
Neillville, WI 54456
(715) 743-5121

Debi Kelly
MO Alternatives Center
531 Clark Hall
Columbia, MO 65211
(573) 882-1905

Ronald Kelley
Prairie View A & M University
PO Box 737
Groesbeck, TX 76642
(254) 729-8229

Robert A. Kelley
Prairie View A & M University
4125 Mitchell Ave
PO Box 7077
St. Joseph, MO 64507
(816) 279-1691

Kenneth M. Keneshiro
PO Box 50004
Honolulu, HI 96850
(808) 541-2600

Susan Kerr
228 W. Main, ms-ch-12
Goldendale, WA 98620
(509) 773-5817

Lainie Kertesz
Johnny's Selected Seeds
RR # 1, Box 2850
Albion, ME 04910
(207) 437-4395

Nathaniel Keys
PO Box 3059
Prairie View A&M Univ.
Prairie View, TX 77446-3059
(409) 857-2227

Scott Kimrey
16057 Hwy N
Licking, MO 65542
(417) 967-4545

Betty S. King
419 Ag Engineering Bldg
Lexington, KY 40546-0276
(606) 257-7287

Calvin R. King, Sr.
Arkansas Land & Farm Development Corp.
Rt. 2, Box 291
Brinkley, AR 72021

Lou Ann King
1400 Independence Ave. SW Stop 0511
Washington, DC 20250
(202) 690-1098

Ross V. King
Ag. & Rural Development
Rt. 2, Box 291
Brinkley, AR 72021
(870) 734-1140

Jennifer-Claire Klotz
1400 Independence Ave, SW, Room 2644
South Washington, DC 20250
(202) 690-4077

Gary Kobylski
USDA-NRCS
2028 Walter Commons West
Madison, WI 53718

Fred Kocher
3500 Wabash
Springfield, IL 62794

Steven Koenig
1800 M St., NW
Washington, DC 20036
(202) 694-5353

Sue Kohler
Southern Illinois University
Carbondale, IL
62901-6891
(618) 536-4451

Chris Kohler
Southern Illinois University
Carbondale, IL 62901-6511
(618) 453-2890

Penelope Korb
USDA/ERS
1800 M Street, NW
Washington, DC 20036
(202) 694-5575

Lisa Krall
USDA/-NRCS
967 Illinois Ave. Ste 3
Banger, ME 04401
(207) 990-9100

Kim S. Kroll
USDA/SARE
2121 Ag/Life Sciences Surge Building
University of Maryland
College Park, MD 20742
(301) 405-5717

Margaret Krome
Michael Fields Ag. Institute
2524 Chamberlain Ave.
Madison, WI 53705
(608) 238-1440

George Kuepper
Box 3657
Fayetteville, AR 72702
(501) 442-9824

Dan Kugler
1400 Independence Ave, SW, Room 3909 So. Bldg.
Washington, DC 20250
(202) 720-7947

Gary LaCompte
RR 2 Box 34
Tyndell, SD 57066

Donna Lamb
59 E. Main St.
Dover-Foxcroft, ME 04426
(207) 564-3301

Dennis Lamm
212C Animal Sciences Bldg.
Ft. Collins, CO 80523-1171
(970) 491-5168

Gary Lesoing
108 W N. Main
Richard, MO 64085
(816) 776-6961

Larry Lev
213 Ballard Extension Hall, OSU
Corfallis, OR 97331-3601
(541) 737-1417

Kim Leval
CSARE
454 Willamette St.
Eugene, OR 97401
(541) 687-1490

Sherman Lewis
Langston, OK 73050
(405) 466-6023

David L. Lindell
100 W. Franklin, Rm. 16
Clinton, MO 64735
(660) 885-5556

Ramiro E. Lobo
5555 Overland Ave, Bldg. 4
San Diego, CA 92123-1319
(858) 694-3666

Maurine Long
601 Business Loop 70 W
Columbia, MO 65203
(573) 876-0931

Bob Lovian
14th Independence Ave.
Washington, DC 20250

Jim Lukens
Box 3657
Fayetteville, AR 72702
(501) 442-9824

David Lyons
PO Box 21928
Greensboro, NC 27420
(336) 334-7734

Ron Macher
3903 W Ridge Trail Rd.
Clark, MO 65243
(800) 633-2535

Tabitha Madzura
Missouri Watershed Information Network
222 Ag. Engineering Bldg.
Columbia, MO 65211
(573) 882-0085

Mary Mafuyai-Ekanem
PO Box 14478
Greensboro, NC 27415
(336) 334-7024

Clarence E. Manning
3401 SW Van Buren
Topeka, KS 6661
(785) 266-0248

Emmanuel Oduro Marfo
c/o Ministry of Food & Agriculture, Box M 37
Accra, Ghana

Bruce A. Marriott
122 Taylor Hall, 59 College Rd.
Durham, NH 03824
(603) 862-2033

Dyremple Marsh
110 Allen Hall
Lincoln University Cooperative Extension
Jefferson City, MO 65102

Valeria Martinez
PO Box 190
New Town, ND 58763
(701) 627-4783

Merrill D. Marxman
685 Larry Power Rd.
Bourbonnais, IL 60914
(815) 937-3233

Mae Massey
14TH & Independence Ave, SW Room 4069-S
Washington, DC 20250-1008
(202) 720-7233

Anita Matt
S & K Holding
Box 478
Palson, MT 59860
(406) 883-4317

Wym Matthews
2400 Briston Ct., Ste. 100
Olympia, WA 98502
(360) 754-3588

Yvonne Matthews
Cooperative Extension
106 Allen Hall
PO Box 29
Jefferson City, MO 65102-0029
(573) 681-5536

Ronald F.L. Mau
University of Hawaii
3050 Maile Way
Honolulu, HI 96822
(808) 956-7063

Teresa Maurer
NCAT/ATTRA
PO Box 3657
Fayetteville, AK 27202
(501) 441-9824

Diane Mayerfeld
Iowa State University Extension
2104 Agronomy Hall
Ames, IA 50011

McKinley Mayes
USDA/CSREES
1400 Independence Ave. SW, Stop 2209
Washington, DC 20250-2209
(202) 720-3511

John C. Mayne
Stuckey Bldg, Rm 203, 1109 Experiment St.
Griffin, GA 30223
(770) 229-3350

Jennifer Mayo
Beginner Farmers of New Hampshire
719 Main St. Rm 220
Locanin, NH 03253
(603) 528-8703

McKinley Mays
1400 Independence Ave, SW, Stop 2209
Washington, DC 20250-2209
(202) 720-3511

Robert McCall
255 Market St.
Ste. Genevieve, MO 63670
(573) 883-3548

Richard McCarthy
Loyola University, Box 907
7214 St. Charles Ave
New Orleans, LA 70118
(504) 861-5898

Susan McCue
One Shields Ave
Davis, CA 95616-8699
(530) 752-7849

Ray McGee
1000 ASU Drive #479
Alcorn State, MS 39096-7500
(601) 877-6128

J.W. McGuire
925 East Baddoak Park
Lebanon, TN 37087
(615) 444-9584

Leon McIntyre
PO Box 81
Linneus, MO 64653
(660) 895-5123

M. Ray McKinnie
North Carolina A & T
State University Corp. Ext. Program
PO Box 21928
Greensboro, NC 22420-1928
(336) 334-7957

Freddie McNeil
USDA/NRCS
6-3237 Beecher Rd Ste. F
Flint, MI
(810) 766-5193

Lee Meadows
PO Box 508
Heathsville, VA 22473
(804) 580-9089

Barbara Meister
148 Cypress Park
Santa Cruz, CA 95060
(831) 421-9727

Steve Mellis
University Outreach & Extension
205 Agricultural Engineering Bldg.
Columbia, MO 65211
(573) 882-0085

Bob Meyer
460 Henry Mall
Madison, WS 53706
(608) 262-7408

Leslie Michael
7205 Marine Rd
Edwardsville, IL 62025
(618) 656-7300

Kristi Michael
700 Main, Courthouse 1st Floor
Trenton, MO 64683
(660) 359-5643

Roxanne T. Miller
121 S. Meramec, Suite 501
St. Louis, MO 63105
(314) 889-7607

Charles Miller
700 SW Harrison, Suite 1300
Topeka, KS 66603
(785) 296-3737

Richard Molinar
1720 S. Maple Ave
Fresno, CA 93702
(559) 456-7555

Gaylord Moore
322 Boonville
Springfield, MO 65802
(573) 862-9284

John M. Moore
7205 Marine Rd
Edwardsville, IL 62025
(618) 656-7300

Ron Morrow
NCAT/ATTRA
Box 3657
Fayetteville, AR 72702
(501) 442-9824

Ginah K. Mortensen
901 N. 5th Street
Kansas City, KS 66101
(913) 551-5211

Safdar Muhammad
Tennessee State University
Box 1226, 3500 John A. Merritt Blvd.
Nashville, TN 37209-1561
(615) 963-5824

D. Chongo Mundende
PO Box 1258
Langston, OK 73050
(405) 466-6023

Steve Muntz
110 North Maysville St. Suite 100
Mt. Sterling, KY 40353
(606) 497-0603

Stan Murray
HCR 62, Box 35
Sedgewickville, MO 63781
(573) 866-2262

Robert F. Myers
601 W. Nifong Blvd., Suite 1D
Columbia, MO 65203
(573) 449-3518

Joseph Myers
1616 Missouri Blvd PO Box 630
Jefferson City, MO 65102

Joanna Nakata
300 Ala Moana Blvd., RM 5-112
Honolulu, HI 96850-0001
(808) 541-2600

Robert Napier
c/o Orange Agricultural College
Leeds Parade Orange
New South Wales 2800
Australia
(612) 636-5603

Anderson Neal Jr.
700 W. Capitol Ave.
Little Rock, AR 72201
(501) 301-3131

Astrid Newenhouse
460 Henry Mall
University of Wisconsin
Madison, WI 53706
(608) 231-2622

Andrew Nganga
PO Box 34972
Nairobi,
Kenya, East Africa

Louis Nichols
1 Harrison St.
LeesBurg, VA 20175
(703) 777-0428

Neils W. Nielsen
USDA/RMA/RSO
3401 SW Van Buren St
Topeka, KS 66611-2227
(785) 266-0248

Michael F. Nolan
215 Gentry Hall
Columbia, MO 65211
(573) 882-2745

Isabelle Nyirakabibi
Cooperative Extension
Allen Hall
Jefferson City, MO 65101
(573) 681-5460

Lydia Oberholter
9200 Edmonston Rd, Ste 117
Greebelt, MD 20880
(301) 441-8777

Wayne Odegaard
Florida Cooperative Extension Service
19490 Oliver Street
Brooksville, FL 34601
(352) 754-4433

Rafael F. Olmeda
PO Box 9031
Mayaguez, PR 00681
(787) 265-2415

Thad Olsen
South Dakota Dept. of Agriculture
523 E. Capitol Ave
Pierre, SD 57501-3182
(605) 772-4026

Carry Oostveen
248 Grand Ave., STE 1
Auburn, NY 13021
(315) 255-1183

Febe B. Ortiz
6200 Jefferson NE, Suite 305
Albuquerque, NM 87109
(505) 761-4445

Debra Ortmann
3547 Haines Rd.
Duluth, MN 55811

Michael Osborne
4095 Albright Cirlee
Clarksville, TN 37043

Karen Ososki
2723 Selkirk Rd.
Sandpoint, ID 83864
(208) 265-0506

John O'Sullivan
Box 21928
Greensboro, NC 27420
(336) 334-0000

Jennifer L. Ours
West Virginia University Extension Service
PO Box 488
Buckhannon, WV 26201
(304) 473-4208

George Owens
1712 Bedie Road
Chipley, FL 32428
(850) 482-9508

J.C. Owsley
RT 1, Box 1895
Cross Timbers Rd
Cross Timbers, MO
(417) 998-6450

Jody Padgham
230 Taylor Hall
427 Lorch St
Madison, WI 53706
(608) 262-0705

Sunil K. Pancholy
106 Perry-Paige Hall, FAMU
Tallahassee, FL 32307
(850) 599-3594

Vickie J. Parker-Clark
106 E. Dalton Ave
Coeur d'Alene, ID 83815
(208) 667-6426

Stuart Parkinson
51 West Oneida
Preston, ID 83263
(208) 852-1097

Ruth Anne Parrott
Food Circles Networking Project
135 W. Market
Warrensburg, MO 64093
(660) 747-3210

Thomas Parslow
633 Extension Building
432 N. Lake St.
Madison, WI 53706
(608) 262-9309

Mitchell Patterson, Jr.
PO Box 9081
Petersburg, VA 23806
(804) 524-5834

K.B. Paul
Cooperative Extension
109 Allen Hall
PO Box 29
Jefferson City, MO 65102-0029

Alfred Peters
American Samoa Community College-AHNR
PO Box 5983
Pago Pago, AS 96799
(684) 699-1575

Sara M. Peters
203 Anheuser-Busch Natural Resources Bldg.
Columbia, MO 65211
(573) 882-9866

Orlando Phelps
102 Fisher Hall
Southern University
Baton Rouge, LA 70813
(225) 771-3661

Lorette Picciano
Rural Coalition
1411 K Street, Ste. 901
Washington, DC 20005
(202) 628-7160

Roberto R. Pinero
GAO
441 6 St., NW, Suite 2T48
Washington, DC 20548
(202) 512-6783

Willie Pittman
USDA/NRCS
5601 Sunnyside Ave Stop 5474
Beltsville, MD 20705
(301) 504-2194

Dale K. Pollet
LSU Agricultural Center
Box 25100
Baton Rouge, LA 70894-5100
(225) 388-2180

Arthur Purcell
PO Box 21928
Greensboro, NC 27411
(336) 334-7734

Nancy Ragsdale
5601 Sunnyside Ave, Mail Stop 5140
Beltsville, MD 20705-5140
(301) 504-4509

Bill Rahn
Foundation for the Mid-South
308 East Pearl, 2nd Floor
Jackson, MS 39201
(610) 355-8167

James E. Reaves
Tennessee State Extension
5565 Shelby Oaks Drive
Memphis, TN 38134
(901) 274-4370

Bud Reber
212 J.C. Penney Bldg.
8001 Natural Bridge Rd.
St. Louis, MO 63121
(314) 516-5184

Jerome Recce
8908 Dangerfield Pl.
MD 20735

Ronald Reum
Fort Berthold Community College
Box 490
Newtown, ND 58763
(701) 627-4738 X:266

Bonnie Rice

George W. Richardson
University of Arkansas-Pine Bluff
PO Box 4806, 1200 Univ. Ave
Pine Bluff, AR 71611
(870) 541-0047

Louie Rivers, Jr.
Kentucky State University
Frankfort, KY 40501

JoAnn Robbins
117 N. River St.
Hailey, ID 83333
(208) 788-5585

Mark Robbins
1767 Angus Campbell Rd
Abbots Ford, BC U3 2M3
(604) 556-3086

Chris R. Robichaux
114 Courthouse Street
Breaux Bridge, LA 70517
(318) 332-2181

David Robinson
Lincoln University
Holts Summit, MO 65042
(573) 168-1516

Phil Rockers
PO Box 248
Sullivan, MO 63080

Berran Rogers
Virginia State University
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Ed Rollins
5129 Prospect Rd
Prospect, TN 38477
(931) 363-0265

W. Wade Ross
4604 Locksford Dr.
Bryan, TX 77802
(409) 776-8085

Monica Roth
615 Willow Ave
Ithaca, NY 14850
(607) 272-2292

Pam Roy
430 West Manhattan #5
Santa Fe, NM 87501
(505) 983-4098

Greg Ruark
UNL-East Campus
Lincoln, NE 68583-0822
(402) 437-5178

Richard Rudel
218 Mumford Hall
Columbia, MO 65211

Kathy Ruhf
New England Small Farm Institute
PO Box 937
Belchertown, MA 01007
(413) 323-4531

Phil E. Rzewnicki
202 Kottman Hall
Ohio State University
Columbia, OH 43210
(614) 292-0117

Louis S. Nichols
1 Harrison Street
Leesburg, VA 20175
(703) 777-0428

Heather Saams
1416 Chandler St.
Madison, WI 53711
(608) 258-9248

Al Sampson
Ag Improvement Project
10056 S. Parnell
Chicago, IL 60658
(773) 445-7125

Cliff E. Sanchez
Ag Service Bldg, 267 Courthouse Road
Los Lunas, NM 87031
(505) 865-4642

Royce Schaneman
PO Box 94947
Lincoln, NE 68509-4947
(402) 471-4876

Jim Schild
Box 308
Aurora, NE 68818
(308) 436-6622

Kevin Schoessow
W6646 Hwy. 70
Spooner, WI 54801
(715) 635-3506

Dan Schofer
4906 Westway Dr.
Bethesda, MD 20816

Naomi Schultz
MO Alternatives Center
531 Clark Ave.
Columbia, MO 65211
(573) 882-1905

Margaret Schuster
6464 Liberty Pole RD.
Dansville, NY 14437
(716) 669-2803

Mark Schuster
6464 Liberty Pole Rd.
Dansville, NY 14437
(716) 669-2803

Samuel Scott
1000 ASU Dr., #1080
Alcorn State, MS 39096
(601) 877-3948

Dickey Selmon
1000 ASU Drive # 479
Alcorn State, MS 39120

Dan Selock
150 E. Pleasant Hill Rd, SIU
Carbondale, IL 62901-6891
(618) 536-4451

Robin Shepard
216 Ag Hall, 1450 Linden Drive
Madison, WI 53706
(608) 262-0020

Dan Shepherd
Rt 1 Box 7
Clifton Hill, MO 65244
(660) 261-4567

Robin S. Shimabuku
310 Kaahumanu Ave #214
Kahului, HI 96732
(808) 244-3242

Dennis F. Shoup
PO Box 1258
Pierre, SD 57501
(605) 224-2476

Marion Simon
Kentucky State University
Box 196
Frankfort, KY 40501
(502) 227-6437

Rose Skora
Racine City UWEX Office 14200 Washington Ave
University of Wisconsin Extension
Dturterant, WI 53177
(414) 886-8460

Glen Slade
Virginia State University
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Susan Smalley
A-270 Plant & Soil Sciences Bldg
East Lansing, MI 48824

R. David Smith
162 Morrison Hall
Ithaca, NY 14853
(607) 255-7286

Melbah M. Smith
233 E. Hamilton St., PO Box 22786
Jackson, MS 39202
(601) 354-2750

David Smith
Cornell University
162 Morrison Hall
Ithaca, NY 14853

Don A. Smith
115 West Court St.
Kahoka, MO 63445-1414
(660) 727-3339

James Smith
4700 River Road, Unit 60
Riverdale, MD 20737
(301) 734-8295

Walter Smith
18450 Ridgeview Ln.
Dexter, MO 63841
(573) 624-5939

L.A. Smith
PO Box 324
Little Rock, AR 72203

Anothony Smith
HC 63 Box 73
Moyers, WV 26815

Mary Sobba
101 N. Jefferson St., Room 304
Mexico, MO 65265
(573) 581-3231

Cliff Somerville
Virginia State University
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Kim St. John
400 Edward St.
Henry, IL 61537
(309) 364-3979

Bobby Stanaland
HCR 1 Box 117
Plainview, TX 79072
(806) 889-3315

Darin Starr
153 South Odell Ave
Marshall, MO 65340
(660) 886-6908

Jon Stahl
29258 State HWY Z
Catron, MO 63833
(573) 357-4476

Valdasue Steele
701 Colege Extension 701 College Ave.
St. Maries, ID 83861
(208) 245-2422

John Stencel
USDA-STOP 3644 14th Independence Ave. SW
Washington, DC 20250

Jerry Stensing
3217 Bemidji Ave North #3
Bemidji, MN 56601
(218) 755-4339

Karen Stettler
PO Box 130
Lewiston, MN 55952
(507) 523-3366

Andrew Stevens
3219 Ostrander Road
Ostrander, OH 43061
(740) 666-3053

Loney Stewart
University of Maryland-Eastern Shore
Trigg Hall, Rm 1137
Princess Anne, MD 21853
(410) 651-6313

Les Stillson
NRCS
1203 College Park Dr., Suite 101
Dover, DE 19904
(302) 678-4162

Steven Stockdale
1400 Independence Ave., SW
Washington, DC 20250
(202) 690-3229

Eileen S. Stommes
USDA/AMS
PO Box 96456, Room 4006-So. Bldg
Washington, DC 20090-6456
(202) 690-1300

Robert Stone
PO Box 397
Sacaton, AZ 85247
(602) 963-7739

Della Streaty-Wilhoit
820 Chestnut St. 207 Schweich
Jefferson City, MO 65101
(573) 681-5369

Finis Stribling III
Tennessee State University
200 Market St.
PO Box 186
Bolivar, TN 38008
(901) 664-9190

Lon Strum

Singhs Surendra
3506 John A. Merritt Blvd.
Nashville, TN 37209

Russell W. Sutton
291 Barke Hall
Clemson, SC 29634
(864) 656-5794

Larry Swartz
University of Kentucky
108 Ag. Engineering Bldg.
Lexington, KY 40546
(606) 257-3000

Tom Syverud
University of Wisconsin Extension
UW Ashland Ag. Research Station
RR3 Box 413
Ashland, WI 54806
(715) 682-7268

Marcella Szymanski
University of Kentucky
125 Robinson Rd.
Jackson, KY 41339
(606) 257-9511

Johnathan Thomas
PO Box 397
Sacaton, AZ 85247
(602) 963-7739

Robert Thomas
222 Ag. Engineering Bldg.
Columbia, MO 65211
(573) 882-2480

Marc Thomas
PO Box 4061
Fort Valley, GA 31030
(912) 825-6269

James Thompson
PO Box 1071
Lebanon, MO 65536
(417) 532-7126

Jennifer D. Thorn
1916 Maryland Hwy, Suite A
Mt. Lake Park, MD 21550
(301) 334-6960

John M. Thurgood
44 West St., Ste. 1
Walton, NY 13056
(607) 865-7090

Keith A. Ticknor
PO Box 2890
Washington, DC 20013
(202) 720-8578

James E. Tillman
1902 Fox Drive
Champaign, IL 61820
(217) 398-5267

Andrea Tillman
1000 ASU Dr., #1080
Alcorn State, MS 39036
(601) 877-3950

Lisa Tilly
325 Mumford Hall
Columbia, MO 65211
(573) 882-4827

Eric Toensmeier
New England Small Farm Institute
PO Box 937
Belchertown, MA 01007
(413) 343-4531

Laura Tourte
1432 Freedom Blvd
Watsonville, CA 95076
(831) 756-8040

Gus Townes
513 Madison
Montgomery, AL

Jerry Townsend
USDA Rural Development
1817 S. Neil St. Suite 103
Champaign, IL 61820
(217) 398-5412

John Travlos
325 Mumford Hall
Columbia, MO 65211
(573) 882-4827

John Tucker
RT 1, Box 140
Tunas, MO 65764
(417) 993-4358

Larry Tucker
HCR 71, Box 101
Thornfield, MO 65762
(417) 265-3262

Robert Turnbull
PO Box 1972
Ames, IA 50010

Bailey Turner
PO Box 21928
Greensboro, NC 27411
(336) 334-7024

Jan Tussick
6197 Paulsen Lane
Polson, MT 59860
(406) 676-5901

Brenda VanderMey
Box 341356 Brackett 132 Dept. of Sociology
Clemson, SC 29634

Dave Varner
1201 W. 23rd St.
Fremont, NE 68025
(402) 727-2775

Kristen Vetterlein
3408 Woodland Ave Ste 205
IA 50266

Patrick Vincent
Virginia State University
PO Box 9081
Petersburg, VA 23806
(804) 524-6964

Mark R. Wadsworth
Intertribal Ag Council
PO Box 1003
Ft. Hall, ID 83203
(208) 237-2424

Bill Wagner
31581 Shady Drive
Stoutland, MO 65567
(417) 286-3669

Lue A. Walters
402 N. Kays Dr.
Normal, IL 61761
(309) 452-2492

Sally Ward Maggard
USDA/CSREES-ECS
1400 Independence Ave SW, Mail Stop 2215
Washington, DC 20250
(202) 720-0741

Alan Ware
PO Box 588
Poteau, OK 74993
(918) 647-9123

Thomas A. Weber
1400 Independence Ave, SW, Room 5109
South Washington, DC 20250
(202) 720-4527

Ann Wells
NCAT/ATTRA
PO Box 3657
Fayetteville, AR 72702
(501) 442-9824

Michael Wells
1000 ASU Drive # 479
Alcorn State, MS 39120

John A. Widner
PO Box 2180
Ardmore, OK 73402
(580) 223-3810

Bill Wilcke
1390 Eckles Ave.
St. Paul, MN 55108

John Wilcox
5501 Shelby 373
Shelbina, MO 63468

Bonita Williams
Cooperative Extension
303 Allen Hall
Lincoln University
PO Box 29
Jefferson City, MO 65102-0029
(573) 681-5523

Clover Williams
507 Kendall
Sikeston, MO 63801
(573) 481-0190

Savannah E. Williams
1411 K. St. NW, Ste. 901
Washington, DC 20005
(202) 628-7160

Kelly Williams
1400 Independence Ave. SW Rm 3071
Washington, DC 20090

Freddy Williams
14th Independence Ave. SW
Washington, DC 20250

Doug Williams
PO Box 2890
Washington, DC 20013

Mary Williams
NRCS
1847 Dunn Road
Florissant, MO 63033
(314) 830-3790

Edward M. Wilson
USDA/CSREES/PAS STOP 2220
Washington, DC 20250-2220
(202) 401-4329

Amber Wilson
901 N. 5th St.
Kansas City, KS 66101
(913) 551-5203

Dean Wilson
University of Missouri Extension
PO Box 497
Hillsboro, MO 63050
(635) 797-5391

Jane Ford-Wilson
USDA Forest Service
3903 Gardenside Dr.
Huntsville, AL 35810
(256) 851-5417

Richard J. Winston
Tennessee State University
John A. Merritt Blvd.
Nashville, TN 37209
(619) 963-5538

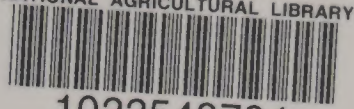
Kent Wolfe
307 Morgan Hall Box 1071
Knoxville, TN 37901
(423) 974-3824

Bruce Wright
USDA National Agroforestry Center
East Campus UNL
Lincoln, NE 60503

Francis Yawson Asiedu
c/o Minis of Food & Ag., Box M37
Accra, Ghana

Andy Yench
University of Wisconsin Extension
640 S 4th St.
Milwaukee, WI 53214
(414) 290-2431

NATIONAL AGRICULTURAL LIBRARY



1022548784

NATIONAL AGRICULTURAL LIBRARY



1022548784